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Tome XCI. — N° 22. QUARANTE-SEPTIEME ANNEE Deuxième Semestre 1927 Samedi 26 Novembre 1927.

LE GÉNIE CIVIL

Revue Générale Hebdomadaire

des Industries Françaises et Étrangères

INDUSTRIE - TRAVAUX PUBLICS - AGRICULTURE - ARCHITECTURE - HYGIENE
ECONOMIE POLITIQUE - SCIENCES - ARTS

LE PONT SUSPENDU RIGIDE DE FLORIANOPOLIS (BRÉSIL)

La ville de Florianopolis, capitale de l'État de Santa-Catharina (Brésil méridional), est située sur une île de forme allongée, séparée de la côte par un détroit d'une largeur moyenne de 1 000 mètres et d'une profondeur trop faible pour être accessible aux grands navires : ceux-ci déchargent dans un port situé à l'extrémité septentrionale de l'île, et les marchandises sont transportées par chalands à Florianopolis et sur le continent. Le port est en voie d'agrandissement et doit être relié à Florianopolis (à 19 km) et à la grande ligne de Saõ-Paulo-Montevideo par un chemin de fer électrique à voie de 1 mètre, d'environ 180 km de longueur. Cette ligne franchit le détroit au voisinage de la ville, en un point où sa largeur se réduit à 450 mètres.



FIG. 1. — Élévation du pont suspendu rigide de Florianopolis.

Les premières études ayant montré que, pour la portée imposée de 340 mètres, le pont suspendu était plus économique que le cantilever, un pont du type classique, à câbles en fil d'acier et poutre de rigidité de hauteur constante, fut mis à l'étude ; puis il fut reconnu qu'un chaîne de barres articulées en acier spécial à haute résistance, pouvait être substituée au câble avec une économie due principalement à la facilité du montage. Les auteurs du projet, MM. Robinson et Steinmann, songèrent alors à profiter de la rigidité des chaînons de l'organe de suspension, pour constituer la moitié médiane de la membrure supérieure de la poutre de rigidité : il en résulta un ouvrage d'un type tout nouveau, présentant, avec une forte économie de métal, un sensible accroissement de raideur et un aspect esthétique satisfaisant. Leur projet a été exécuté par l'American Bridge C° et les travaux furent terminés en 1926; nous allons décrire les dispositions essentielles de l'ouvrage et son montage, d'après une étude très détaillée publiée dans les *Proceedings of the American Society of Civil Engineers*, de mai, par MM. Steinmann, un des auteurs du projet, et Grove, inventeur du procédé de traitement de l'acier formant la chaîne.

CARACTÉRISTIQUES DE L'OUVRAGE. — Le pont (fig. 1 et 2) comporte une seule travée suspendue, de 340 mètres de portée et 30m 85 de hauteur libre au-dessus des mers moyennes, et des viaducs d'accès à poutres droites de portées variables, d'une longueur totale de 221 mètres sur le continent et 259 mètres sur l'île. Les poutres, écartées de 10m 22 d'axe en axe, portent une

X-TG 140

Design of Bridges Against Wind

Symposium by

D. B. Steinman, M.ASCE
Consulting Engineer, New York, N. Y.

Reprinted from Civil Engineering *for October, November, December 1945, and January, February 1946*

X-TG 140.S8 #3

In Oversize Box #27

IL TEMPO 3 Settembre 1953

IL PONTE PIU' LUNGO DEL MONDO TRA SCILLA E CARIDDI

A PIEDI IN SICILIA FORSE TRA SETTE ANNI

Un delegato del progettista americano Steinman, l'italo-americano Palmieri ha presentato al nostro Governo un promemoria per la realizzazione dell'opera

Il ponte sospeso fra Scilla e Cariddi, sullo Stretto di Messina, potrebbe essere inaugurato fra sette anni, nel '60. La clausola numero otto del Promemoria rimesso al Governo italiano lunedì scorso dal rappresentante dell'architetto americano David Bernard Steinman dice testualmente: «*Impegno di costruire il ponte entro un periodo massimo di sette anni, decorrendo dalla data pratiche di una realizzazione rapida. Palmieri è un italo-americano laureatosi a Napoli. E' un tecnico delle costruzioni in zone terremotate, come quella dello Stretto. In America esordì con la prima analisi degli effetti dei moti tellurici sui grattacieli. Ha reso possibile la costruzione del grande ponte «Golden Gate» a San Francisco con l'uso della pozzolana resistente all'azio-*

cavi portanti, fissati sopra a piloni, dovranno sorreggere due lunghe travi maestre a traliccio distanti 27 metri e mezzo tra asse ed asse.

«Un ponte attraverso lo Stretto di Messina — ci ha spiegato l'ing. Palmieri — non può essere altro che un ponte sospeso. La natura stessa ha dettato le leggi che governano il valico di lunghe distanze. La natura ha disposto, per esempio, che le sponde siciliane e quelle calabre siano costituite da due speroni rocciosi che si fronteggiano a breve distanza. Ed ecco che, per la costruzione del ponte, la natura ci ha fornito due piloni naturali, che ci risparmiano la costruzione di due piloni artificiali, che sarebbero costati molti miliardi. Ma la natura ci ha anche fornito, nella roccia, gli ancoraggi per i cavi portanti. Ecco perché il ponte sospeso è la soluzione più logica per il valico dello Stretto di Messina».

Il progetto Steinman prevede una campata centrale di 1524 metri e due campate laterali di 732 metri ciascuna. Le due travi maestre a traliccio, distanti 27 metri e mezzo tra asse ed asse, avranno un'altezza di 60 metri. Il piano stradale sarà a 65 metri sul livello del mare. Il ponte avrà quattro corsie per il traffico automobilistico e due binari per la ferrovia. Le due travi maestre a traliccio saranno collegate da due travi trasversali, distanti 200 metri l'una dall'altra, che sorreggeranno il piano stradale e quello ferroviario.

«Il ponte — ha proseguito l'ing. Palmieri — sarà costruito con acciaio speciale, che resiste alla corrosione dell'acqua salsa. Per la costruzione dei piloni, che dovranno sorreggere i cavi portanti, si dovrà ricorrere a speciali cassoni pneumatici, che permettono di lavorare sott'acqua. Per la costruzione dei piloni, che

In Oversize Box #27

X-TG 140 .S8 #4

Saturday, September 17, 1955

ESCANABA DAILY PRESS

Brooklyn Bridge Newsboy At 7; He Designed Mackinac Straits Span

By JEAN WORTH

The suspension bridge being lit in the Straits of Mackinac, er so many years of talk about ridge there, is the work of ny men.

The man most responsible for anging the dream into a plan is . David B. Steinman. He at- ided a bridge press conference St. Ignace and Mackinaw City Sept. 9 and he was glad to talk out the bridge, but even more thusiastic, it seemed, about his ok of verse soon to be published the Davidson Press in New rk. It is titled "I Built a Bridge d Other Poems."

On Mackinac Island one night . Steinman heard a fog horn unding and he used the rhythm the signal for the cadence of a em. "Out of the Fog." It is ter- verse, third line rhyming:

e foghorn blasts the night in mournful tone
id passing ships sound horns in hoarse reply,
ch veiled in blinding mist, bor- aft, alone.

penetrable fog enshrouds the sky
d cloaks the sea with chilling clouds of doom,
world in shrouds as though about to die . . . etc.

Mathematics His Hobby

Dr. Steinman is a mathemati- an. Creative mathematics is his bby and mathematics are, of urse, the core of his equipment an engineer. He had six years college mathematics before he tered engineering school.

When he returned to City Col- e of New York on one occasion mathematics professor, the e Paul Saurel, expressed his appointment that Dr. Steinman d foresaken mathematics. "Have u read my book?" asked Stein- an. "Oh," said Saurel "that is out applied mathematics; I re mathematics!"

When Dr. Steinman wrote verse did it mathematically, scienti- ally. He listed all the rhyming rds and then fitted them into act patterns of composition. he critics," he said "say that my ems are too mathematical. It is virtue now to have irregularity



DR. DAVID B. STEINMAN demonstrates to a meeting of the Mackinac Bridge Authority and the press at Mackinaw City how the Mackinac Straits Bridge will be aerodynamically stable. He is using a miniature section of the bridge hung from spring wires to demonstrate wind force results simulated by the electric fan. The trusswork of a bridge section is shown, with the roadway at top. (Daily Press Photo)

in the United States, he said.

Dr. Steinman's bridge designs and counsel on bridges have brought him many honors. He has 14 academic degrees, four earned and 10 honorary. From 1910 to 1914 he was professor of civil engineering at the University of Idaho and for three years after 1917 he had a similar post at City College in New York. Since 1920 he has been in private practice, designing and consulting on the design of bridges.



Straits Span Project

He has a large organization. Accepting a $70,000 check in periodic payment for services to the Bridge Authority, he reported that he had 46 men at the Mackinac Bridge site and 200 engineers in his New York bridge planning office work-

aerodynamic stability of bridges.)

"Professor Farquharson made the wind tunnel tests for the Mackinac Bridge and they show complete aerodynamic stability against all modes of oscillation at all wind velocities up to an impossible magnitude: 632 miles per hour for the lowest mode of oscillations and 942 miles per hour for the next higher mode."

The design orders open areas between trusses and roadway and openings in the deck for stability, but even with deck openings closed by ice, tests show absolute stability, said Dr. Steinman.

Pressures Tested

"We checked the maximum possible ice pressure and the greatest ever recorded was 21,000 pounds per lineal foot. We tested up to a maximum pressure of 28,-

X-TG 140 #5
·58

In Overstreet Box #27

It's Art, Poetry—and A Way to Brooklyn

The Bridge, dedicated 70 years ago, testifies still to its builders' skill and courage.

By HARRY GILROY

BROOKLYN BRIDGE, a structure that has excited the imaginations of many millions of people, went into service seventy years ago today. During the decades since it has stood as a world-famous emblem, reproduced on everything from postcards to souvenir oilcloth table covers, of America's mechanical genius. To New Yorkers and visitors it has been one of the spectacles that make the city exciting. To photographers it has ranked along with Niagara Falls as the continent's premier subject for pictures. To John Marin it was the inspiration for vivid water-colors. To Hart Crane it was an epic poem about the nation. To Lewis Mumford, an example for architects. To David B. Steinman, the noted bridge designer now reconstructing it to carry a heavier load of automobile traffic, it is "an almost living textbook in bridge building." And to the metropolitan section of the American Society of Civil Engineers, voting a few weeks ago, it remains second only to George Washington Bridge among all the "engineering wonders" of Greater New York.

The dedication of this bridge stirred New Yorkers — and Brooklynites, for then the boroughs were separate municipalities—as few other events during the three centuries of the town's history. A rare, beautiful day it was, the kind when there's excitement in the air. It was a Thursday, but the communities declared a holiday and turned out in frock coats and bustles. Down to the banks of the river surged a million people, including many who had come the day in special trains from other parts of the country. (The only that the aerial display thrilled people as far away as the Orange Mountains in New Jersey. Along toward midnight public use of the bridge began, at a toll of one cent per pedestrian. There ensued a race to be first across, and the second man in line on the New York side outdistanced all competitors to assure himself ineradicable fame. His name has unfortunately been forgotten, but anyhow 250,000 people passed over the bridge in the next twenty-four hours.

SEVENTY years later it may seem strange that the dedication of the bridge evoked such a furore. But in the Eighteen Eighties, when the quick bridge trip replaced a ferry passage that sometimes took hours during winter months, its utility alone warranted enthusiasm. Also the bridge had quite a nother value: It seemed to the crowd to be a symbol of the ability of American engineers to do the impossible—at least, what many of the supposedly informed leaders of New York then said was impossible. It was the visual climax of a story of resourcefulness and heroic labor extending over thirteen years, the fruition of a dream that had been quarreled over for twenty-six years.

John A. Roebling had put forward the plan for building the bridge in 1857. He was an immigrant, a graduate of Berlin's Royal Polytechnic Institute with the degree of Civil Engineer, a man to whom freedom meant so much that in 1831 he had led a party of forty out of the repression of his native Thuringia to America.

A Way to Brooklyn

(Continued from Page 26)

Brooklyn ferry slip making his final survey and he died of lockjaw. His son, Washington A. Roebling, 32 at the time, an engineer by training at Rensselaer Polytechnic Institute, a colonel of United States Volunteers by virtue of four years of Civil War service, took over the great project. Three years later, setting the pace for his men in digging the New York foundation seventy-eight feet below the river level, he crumpled under an attack of the "caisson disease"—which at the time was a mystery to the medical profession.

A CRIPPLE thereafter, Colonel Roebling supervised the work of the next eleven years from a room on Columbia Heights, Brooklyn, watching the construction with field glasses. The strange, long-range direction necessitated an intermediary. The engineer found a remarkable one in his wife, Emily Warren Roebling, who taught herself calculus and the essentials of bridge construction in order to transmit her husband's instructions to the subordinate engineers. His nervous system had been left by the illness so tautly drawn that he could not bear to talk with another human being except his wife.

Thousands of brave, strong and skillful people, along with the Roeblings, built the bridge. Beginning in May, 1870, men went below the river in the caisson on the Brooklyn side and learned to gouge away the slime and rock. For many weeks the downward progress was only six inches a week. Blasting was needed, but there were fears that an explosive charge toppled from the towers and crushed men below. One man hung onto his wheelbarrow when it slipped over the edge and plummeted off into space.

ON a day in June, 1878, as one of the cable strands (made up of 300 wires clamped together) was being eased into its final position, it broke loose from the New York anchorage. It snapped 900 feet through the air from the anchorage to the base of the tower, then flailed over the top and slashed into the East River alongside a ferry boat. Two men died on the anchorage and tower and three were seriously injured in those few fearful seconds. Altogether, twenty men died building the bridge.

So the heroic story unfolded while the bridge arched across the East River gate, far higher than anything else in lower Manhattan except for the spire of Trinity Church. But right along with the evidence that the builders were approaching their goal grew insidious rumors. There was talk of graft, worse still of erroneous calculations by the engineers.

The New York Council of Reform, in 1878, led denunciations of the bridge with the statement that it was criminal to spend more money on a structure which "cannot fall either to be taken down by the mandate of the courts or demolished by the winds." There was a final outcry when Colonel Roebling ordered an extra 1,000 tons of steel—strengthening the bridge, he said, while the critics croaked about "overloading."

IN the bright sunlight of May 24, 1883, the sight of the bridge answered all doubts, justified the grim sacrifices. There stood the solid 292-foot-

X-TG 140.58 #6

2-MILE, $60,000,000 BRIDGE

Italy Planning To Span Straits Of Messina



U. S. ENGINEER PLANS WORLD'S LONGEST BRIDGE—Plans for the world's longest bridge—across the *Straits of Messina* and the Italian mainland—are being worked on by Dr. David Steinman, U. S. bridge engineer. The proposed bridge will cost 60 million dollars. Its overall length, including the central section, would be about 9,800 feet. At left is Dr. Steinman's design of the new bridge; at right, Dr. Steinman at work on blueprints of the bridge in his New York office.—Wide World Photo.

ROME, July 18 (AP)—Italians hope to beat a jinx and throw a two-mile, 60 million dollar bridge across the Straits of Messina. An American engineer may help them do it.

Since Ulysses, the hero of Homer's Odyssey, worked his way between Scylla and Charybdis—a pair of mythological crones representing the treacherous tides—the passage between the Italian mainland and Sicily has posed problems.

Ships have been wrecked there. Earthquakes have wrecked cities on the shore, commerce between the Calabraian toe and the Sicilian football has been hindered.

Now Sicily's teeming population is approaching five million and economic reform is awakening Italy's impoverished South. Italians want to bridge the gap with the longest span in the world.

An industrial group in Milan, backing the project, called on Dr. David Steinman, U. S. bridge engineer, to draw up plans. He did, and the Italian government made a model of the bridge from them.

Central Span Would Be 5,000 Feet Long

If carried through, the Messina Straits bridge would be a new wonder of the world, capable of carrying both rail and motor traffic.

"It will have a 5,000 foot central span," says Dr. Steinman.

Overall length of the bridge, including the central section, would be about 9,800 feet. By comparison, San Francisco's famed Golden Gate bridge has a central span of 4,200 feet—at present the longest in the world.

According to Steinman's plans, the bridge would stretch from Ganzirri in Sicily to Punta Pezzo on the Calabrian shore.

Backers say it would be well-traveled. In 1949, when traffic was less than it is now, 220,527 railroad cars, 2,470,660 tons of goods and 3,315,700 passengers were ferried across the straits.

But there's a catch—money. Steinman estimates the cost at 60 million. Others range as high as 90 million.

Some Italians say it can never be done—that the bridge is just a pipe dream.

But Steinman is not discouraged.

"People in Italy and the United States are intensely interested," he says, "and while more work and planning is required, we feel the project would prove economical."

Steinman points out that Sicily provides most of Europe's fruit, that rail traffic carrying fruit over the bridge to the mainland would be a principal source of revenue. In addition, there will be a heavy stream of motor traffic, including produce-bearing trucks.

A Palermo engineer suggests another plan—building an "isthmus" of crushed limestone across the channel, which has an almost uniform depth of 400 feet all the way. Still another engineer backs the idea of a tunnel.

One way or another, Italians seem determined to lick the problem of the ancient and forbidding straits.

X-TG 140

X-TG 140 Copy 1

BRIDGES AND AERODYNAMICS

By

D. B. STEINMAN

This paper, illustrated with lantern slides, motion pictures, and models, was presented by D. B. Steinman, Consulting Engineer, New York, Retiring President of the New York Academy of Sciences, as the Presidential address, at the Annual Meeting of the Academy, December 3, 1953.

X-TG 140
.S8

Copy

JAN 29 1954

Niagara Railway Suspension Bridge



Where Niagara's waters thunder,
Challenging the power of Man,
Filling hearts with awestruck wonder
What a background for a span!

Strong to carry trainloads speeding
High above the fuming flood,
Timid precedents unheeding,
Magic span of wire and wood!

Roebling vowed that he could build it
Where the lashing rapids swirled.
Bold his plan but he fulfilled it:
Built the span and thrilled the world.

D. B. STEINMAN

— *Reprinted from* **THE ROEBLING RECORD,** *October 30, 1953.*

X-TG 140
.S8

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JAN 2 0 1954

PARTNERS



By D. B. STEINMAN

I planted a seed and added my love
To the sunshine and life-force that came from above.
I thrilled to behold how Thy magic power
Made each bud unfold as a beautiful flower.

I groped for the music and words to impart
The gladness and longing that sang in my heart.
The stars brought Thy melody, lingering long,
And my heartstrings recorded the Heaven-born song.

I quarried the rock and carved it with care
To build a cathedral for worship and prayer.
My soul sang Thy story—compassion divine—
As I wrought in Thy glory a reverent shrine.

A flower, a song, or a soul-lifting shrine—
My own share is humble, the magic is Thine.
Though lowly my part, I am thankful to be
Co-working in beauty as partner with Thee!

Reprinted from the
September 1953 issue of

PARTNERS

The Magazine of Labor and Management

NEW YORK PROFESSIONAL ENGINEER

PRESENTATION OF NYSSPE CITATION TO DR. STEINMAN



Left to right: William H. Larkin, P.E., Chairman of the State Board of Examiners of Professional Engineers and Land Surveyors, and NYSSPE Trustee and Past President; Dr. David B. Steinman, P.E.; Dr. John C. Riedel, P.E., NYSSPE, Trustee and Past President, and Brother Augustine Philip, President of Manhattan College.

X-TG-P-54-10

THE NEW YORK STATE SOCIETY
OF
PROFESSIONAL ENGINEERS, INC.

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X-TG140.S4#11

JOURNAL OF A MEETING OF THE BOARD OF REGENTS

OF

THE UNIVERSITY OF THE STATE OF NEW YORK

HELD AT THE STATE EDUCATION DEPARTMENT, ALBANY,
SEPTEMBER 24–25, 1953

Retirement of David B. Steinman

Voted, That the Board of Regents express to Dr David B. Steinman, one of the world's outstanding engineers, its sincere appreciation of his long and faithful service as a member of the Board of Examiners of Professional Engineers and Land Surveyors and of his many contributions to the cause of professional education in the State of New York. Doctor Steinman's retirement from the Board of Examiners culminates a term of service that has lasted for 24 years, a period during which written examinations for licensure in engineering were inaugurated and during which over 28,000 licenses have been granted in engineering or land surveying. Doctor Steinman's contribution to the profession of engineering has brought him universal commendation.

X-TG 140
-S8

A MASTER'S THESIS

Reprinted from the

NAVY-COLUMBIA OFFICIAL FOOTBALL PROGRAM

NOVEMBER 14, 1953

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.S8

X TG140.S2 #15

Christmas Magic

The star-shaped snowflakes softly fall
To deck each bough with sparkling white.
With magic wand the stars are hung
Like jewels of celestial light.
The treetop holds, as crowning gem,
The glowing Star of Bethlehem!

Once shepherds saw the wondrous Light;
Beside a crib they knelt in prayer.
The humblest hearth now glows with Love
Because His gift — a Child — is there!
The angel voices sing again:
Peace on Earth, Good Will to Men!

D. B. Steinman, P.E.

Reprinted from

AMERICAN ENGINEER

December, 1953, issue

1121 15th Street, N. W.
Washington 5, D. C.

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X-TG140 .S8 #14

ENGINEER OF THE MONTH

Co incident with his retirement as a member of the New York State Board of Examiners of Professional Engineers and Land Surveyors, we add to the widespread acclaim to genius and pay tribute to Past President and Fellow Member. Dr. David B. Steinman. our "Engineer of the Month."

Universally acknowledged as a leader in the engineering field and the world's leading authority on the construction of bridges, Dr. Steinman's talents are reflected in the structural splendor and sheer magnificence of bridges erected on five continents of the world. Six of his bridges have received annual awards as the most beautiful in America.

It is beyond the capacity of this Bulletin or, for that matter, the capability of any one engineering group to adequately summarize the achievements, or to appraise the invaluable services to the engineering profession, wrought by this human dynamo who, for over a quarter of a century, has labored assiduously and most effectively in behalf of his beloved vocation.

Reared in the shadow of the now historic Brooklyn Bridge, whose stately towers and graceful lines first fired his boyish imagination, Dr. Steinman began the weaving of a life pattern, the realization of which has brought him both fame and renown in all corners of the world. Endowed with the soul of the poet, and almost magical mental potentiality, Dr. Steinman has built as he dreamed and dreamed as he built.

Dr. Steinman received his B.S. degree (summa cum laude) from the College of the City of New York and his C.E., A.M. and Ph.D. degrees from Columbia



Dr. David B. Steinman

University. He was Professor of Civil Engineering at the University of Idaho from 1910 to 1914 and Professor of Civil and Mechanical Engineering at City College from 1917 to 1920. Since 1920 he has been in private practice as designer and consultant in the construction of most of the notable bridges throughout the world. Currently, he is engaged in the problem of bridging the gap between Italy and Sicily across the Messina Strait, which promises to be the longest span in the world. Dr. Steinman is the recipient of numerous national and international honors, including the twice conferred Norman Medal, the highest award of the American Society of Civil Engineers.

Add to his world renowned engineering accomplishments, his valuable contribution of hundreds of widely published scientific articles, his literary skill in both prose and poetry which gave rise to his classic historical novel, "The Builders of the Bridge," and his profound devotion to the engineering profession and one may gain some concept of a truly great engineer whom we are proud to honor as our "Engineer of the Month."

Reprinted from Brooklyn Engineers' Club Bulletin, Issue of October, 1953

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·S8

X-TG140 S8#5

A LA FRANCE

QUEL est donc ce charme magique, ô France,
De l'amour la chaleur, d'une chanson la cadence,
Cet attrait romanesque auquel battent nos cœurs,
Ce souffle printanier qui nous parle de bonheur ?
La lumière du soleil, du vent la suave caresse,
Les étoiles qui apaisent nos heures de détresse.
Par ton art, ta beauté, de ta culture la fleur,—
O France,— à l'Univers tu as donné un cœur !

O France,— quel est-il, cet appel enivrant
Auquel vibrent tes héros dans leurs nobles élans ?
Tes fils dans leur ardeur l'étendard déployèrent,
Et pour la Liberté, leurs vies ils immolèrent;
Ils forgèrent pour les Hommes ton projet émouvant,
Pour la Fraternité de tous ils versèrent leur sang.
Ce rêve magnifique est maintenant notre flamme—
O France,— à l'Univers tu as donné une âme !

D. B. STEINMAN

Reprinted from:
France-Amérique
LE JOURNAL FRANÇAIS DES ETATS-UNIS
November 22, 1953.

G-TG 140
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The New York Times Magazine

October 11, 1953 SECTION 6

To Bridge A Dilemma

Italians would span Scylla and Charybdis.

By HARRY GILROY

CONFRONTED with the Homeric problem of how to avoid Scylla without falling into Charybdis, David B. Steinman proposes to bridge the dilemma. As the New York engineer is internationally known for designing actual rather than figurative bridges, it is a real crossing of Messina Strait between Italy and Sicily that concerns him. The news he has just received from Italy is that the Cabinet is considering his preliminary plans for what would be the longest span in the world. The plans were approved in August by a congress of officials and engineers assembled at Messina to study the project.



Drawing by William Jensen.
Engineer D. B. Steinman's design for bridge over Messina Strait.

Dr. Steinman's design, which he prepared at the request of the Italian Steel Institute, is for a railroad and highway bridge making a crossing of two miles over notoriously dangerous waters 400 feet deep. Its main span would arch 5,000 feet, thus exceeding the 4,200-foot length of Golden Gate bridge. Its side spans of 2,400 feet would be longer than the main spans of any other bridges in the world except for Golden Gate, George Washington and Tacoma Narrows. The engineer estimates a cost of $60,000,000 and assures that his design would make it the most rigid suspension bridge ever built.

THE proposed structure would be placed in a location where the utmost sturdiness is required of any building. On the Sicilian side of the strait is the city of Messina, where the prevailing low houses and places of business are a reminder that a 1908 earthquake razed the old city. On the mainland side is Reggio, also devastated by the 1908 temblor. It is between these ports that ferries now carry the traffic which would go over the bridge, including a quarter-million railroad carloads of fruit each year from Sicily.

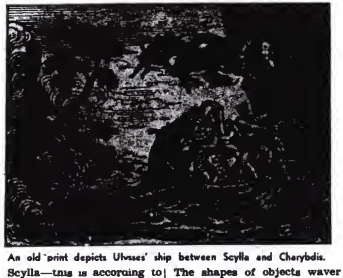
Besides allowing for strength to withstand earthquakes, Dr. Steinman said his design had to provide unusual aerodynamic stability. In winter, when the Calabrian mountains on the east side of the strait are covered with snow, violent northeasterly winds storm across the waters. Every few days an opposing gale comes up from the south and then anything that is not fastened down is likely to blow away. The same thing, in lesser degree, happens at other seasons. To cope with these winds, the engineer is providing a powerful system of stays and using open-work construction with little sail area.

Sinking the piers for the bridge into the treacherous currents of the strait would be a major problem in itself. There is in the strait a northgoing tidal current known as the *montante*, a south-going tidal current called the *scendente*, and both currents produce offspring that go in the opposite direction to the parents and hence are *bastardi*. Where the currents run counter to one another there are *garofali* or whirlpools.

THE worst of the whirlpools, off the Sicilian shore of the strait, is the one known to legend as Charybdis. According to the myth, Charybdis was a larcenous lady who stole the oxen of Hercules (who, by the way, swam the strait clinging to the horns of a bull). For this theft she had a thunderbolt bounced off her head by Zeus (Hercules' father, remember?) and after this she wasn't good for much but to conduct a whirlpool as the opposite attraction to a girl named Scylla who haunted a rock on the Italian side. sailed a disastrous course, as told in the Odyssey: "On one side lay Scylla, and on the other divine Charybdis terribly sucked down the salt water of the sea." What with Scylla's dogs eating some of the mariners and others being engulfed by Charybdis, Ulysses suffered quite a loss of personnel.

AS if a body of water inhabited by such natural forces and unnatural people were not trouble enough for an engineer even of Dr. Steinman's skill, Messina Strait has another terrifying attribute which could have its effect on the proposed bridge. That is an occasional mirage there known as the *fata morgana*.

When wide variations in air and water temperatures through the strait produce air layers of different densities these extraordinary mirages which are reflections, occur. An observer may see himself and adjacent objects cast upon a cloud in the heavens or on a fog bank along the water.



An old print depicts Ulysses' ship between Scylla and Charybdis.

Scylla—this is according to Homer, rather than Dr. Steinman—was a nymph who had the misfortune to fire the ardor of Glaucus, a fisherman who slipped into divine circles as a sea-god after eating an herb. Glaucus paid a call on Circe, the famous herb gardener of antiquity, and asked her help to win Scylla. But Circe fell for the piscatorial charm of Glaucus and she got Scylla out of the way by putting an herb in Scylla's favorite bathing fountain. Instead of being a love drug it made Scylla break out in a very curious way—the heads of ferocious dogs popped out all around her previously admirable waistline. She can hardly be blamed for going to sit on the rock which lies today off the little port of Scilla on the Italian coast.

It was between these two dangerous ladies that Ulysses The shapes of objects waver and distort. Whether Dr. Steinman's proposed bridge would seem to fade, too, under these conditions he does not know. But he will guarantee that it will take more than the *fata morgana* to make his bridge go away in reality.

Dr. Steinman has been receiving regular reports from Dr. Mario Palmieri, an associate bridge engineer who is representing him in Italy, but the problems raised concern structural methods, financing, potential traffic and other such mundane affairs, not miracles or mirages. "Nature has concentrated some remarkable creations in Messina Strait," comments Dr. Steinman. "Mankind has attached to the place some of its most poetic creations. We can build there now a symbol of scientific creativity, a truly great and beautiful structure."

X-TG 140
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ACTIVITES
DES
INGENIEURS PROFESSIONNELS



RAPPORTS PRESENTES

AUX

VII[e] CONGRÈS NATIONAL

ET

II[e] CONGRÈS INTERNATIONAL DES INGÉNIEURS PROFESSIONNELS

(Les 13, 14 et 15 Novembre 1953)

STEINMAN, David Barnard, Consulting Engr., 117 Liberty St., N. Y. 6, N. Y.; DESIGN AND CONSTRUCTION OF LONG-SPAN BRIDGES; BRIDGE AERODYNAMICS. b. N. Y., N. Y., June 11, 1886. s. Louis Kelvin and Eva (Scollard) S. Edn.: B.S., Coll. of the City of N. Y., 1906; A.M., Columbia Univ., 1909; C.E., Ibid., 1909; Ph.D., Ibid., 1911. Hon. Deg.: Sc.D., Coll. of the City of N. Y., 1947; Dr. of Engrng., Manhattan Coll., 1953; Dr. of Sci., Columbia Univ., 1953; Dr. of Engrng., Rensselaer Poly. Inst., 1953; LL.D., Alfred Univ., 1953. m. Irene Hoffman, June 9, 1915. c.: John Francis; Engrng. Work until 1910; Prof. of Civil Engrng., Univ. of Idaho, 1910-14, also Consulting Practice; Special Asst. to Gustav Lindenthal on Design and Construction of Hell Gate Arch Bridge and Other Notable Bridges, 1914-17; Prof. in Chg. of Civil and Mech. Engrng., Coll. of the City of N. Y., 1917-20; Consulting Practice, 1920——; Designing or Consulting Engr. for Many Notable Bridges, Including Suspension Bridge at Florianopolis, Brazil (largest bridge in S. A.), 1922-26; Carquines Strait Bridge, Calif. (longest cantilever bridge in the U. S.), 1923-27; Bridge at Grand Mere, Que., Can., 1923-25; St. John's Bridge, Portland, Ore. (highest span in the Northwest), 1929-31; Sydney Harbor Bridge, Australia; Cologne-Muhlheim Bridge, over the Rhine, Germany; Mt. Hope (R. I.) Bridge (longest span in New England), 1927-29; Henry Hudson Bridge, Maine, 1930-31; Tri-Borough Bridge, N. Y. City; Sky-Ride and Observation Towers (Century of Progress Expn., Chicago), 1933; Henry Hudson Bridge, N. Y. City; Thousand Islands International Bridge, over St. Lawrence River (5 bridges), 1937-38; Deer Isle-Sedgwick Bridge, Maine, 1938-39; Lions Gate Bridge, Vancouver, B. C., Can., 1937-39; Charter Oak Bridge, Hartford, Conn., 1941-42; and others on 5 continents; Engaged in Reconstruction of Brooklyn Bridge, 1948-52; Vice-Pres., Tioga-Nichols Bridge Co., Smithboro Bridge Co.; Dir., Independence Bridge Co., Interboro Bridge Co., Richmond-Hopewell Bridge Co.; Pres., Pan-American Public Works, Inc., Hon. Pres., Steinman, N. Y. State, Natl. Com. for Trade Recovery, 1933-34; Mem., Senate, Columbia Univ. Dept. of Engrng., Mem., Natl. Council of Natl. Econ. League; Mem., Exec. Com., Engrns. Council for Professional Development; Pres., Columbia Toll Bridge Co., 1933-34; Hon. Vice-Pres. and Mem. Adv. Council, Laymen's Natl. Com.; Inventor of New Influence Line Methods and Charts for Design of Railway Bridges; Improvements in Suspension Bridge Design; New System of Design Loading for Railway Bridges; Simplified Methods of Analysis for Bridge Design; Aerodynamic Analysis of Suspension Bridges. Mem.: Natl. Organizing Comm. of Freedom Internatl.; Pub. Works Comm. of N. Y. Soc. of Architects; Natl. Comm. for Columbia Univ. Schl. of Engrng.; Sigma Alpha; Union County Chapter of N. J. Soc. of Professional Engrs.; Erie County Chapter of N. Y. Soc. of Professional Engrs.; Chmn., Comm. on Registration, A.S.C.E., 1951-52; Vice-Chmn., N. Y. State Bd. of Examiners of P. E., 1952-53; Vice-Pres., Associated Alumni of C. C. N. Y., 1950-53; Awarded Testimonial Scroll by Alumni and Friends of Madison House, 1952; Certificate of Cooperation, U. S. Mutual Security Agency, 1952; Fellow of Rsch. Council, Emerson Univ.; Fellow, Aerial League of Amer.; A.A.A.S.; Amer. Geog. Soc.; Royal Soc. of Arts; Life Mem., Phi Beta Kappa; Amer. Soc. Civil Engrs.; Colegio de Ingenieros de Puerto Rico; N. Y. Good Roads Assn.; Cooper Union Alumni Assn.; Chmn., U. S. Council of Internatl. Assn. Bridge and Structural Engrs.; Amer. Assn. Engrs.; Natl. Soc. Professional Engrs.; N. Y. State Soc. Professional Engrs.; N. Y. State Bd. Examiners for Professional Engrs. and Land Surveyors; Natl. Council State Bds. of Engrng. Examiners; Amer. Engrng. Council; Brooklyn Engrs. Club; Amer. Railway Engrng. Assn.; Amer. Soc. for Testing Materials; Amer. Concrete Inst.; Amer. Military Engrs.; Soc. for Engrng. Edn.; Assoc. Alumni Coll. of City of N. Y.; Engrng. Inst. of Can.; Municipal Engrs. of N. Y.; Corp. of Professional Engrs. of Que.; Idaho Soc. of Engrs.; Amer. Inst. of N. Y.; Natl. Pub. Housing Conf.; Advisory Council of City Charter Com. of N. Y.; Amer. Math. Soc.; Acad. Political Sci.; Met. Regional Com. Engrg. Employment and Salaries; Architects and Engrs. Alliance; Ohio Soc. Professional Engrs.; Ky. Soc. Professional Engrs.; Tex. Soc. Professional Engrs.; Hon. Life Mem., Nassau County Chapter, N. Y. State Soc. of Professional Engrs.; Hon. Mem., Engrng. Alumni of Coll. of the City of N. Y.; Life Mem., Professional Engrs. of Ore.; Hon. Mem., Hudson County Soc. Professional Engrs.; Phi Beta Kappa; Sigma Xi; Tau Beta Pi; Soc. for Preservation of Covered Bridges; Natl. Travel Club; Chi Epsilon; Pres., N. Y. Acad. Sci.; Hon. Mem., Legion Beige (Beigium); Hon. Mem., Free French War Veterans; Hon. Mem., Accademia di Filologia Classica (Rome, 1952); Hon. Mem., Internatl. Faculty, Andhra Univ. (India); Trustee of the French Univ. of N. Y.; Hon. Mem., Societe des Ingenieurs Professionnels (France); Life Fellow, Royal Soc. of Arts (England); Pres., Union Internationale des Ingenieurs Professionnels. Hon. Pos.: Knight Commander (with Star) of the Order of the Gold Cross of the Military Chapter of Cyprus and Jerusalem (Rome, 1952); Cross of Commander, Grand Prix Humanitaire de Beigique (Beigium, 1952); Cross of Knight of the Ordre des Chevaliers de la Croix de Lorraine (Paris, 1952); Hon. Companion of the Resistance of the Ordre des Chevaliers de la Croix de Lorraine et des Compagnons de la Resistance (Paris, 1952). Author: Bridges and their Builders, 1941; The Builders of the Bridge, 1945; Suspension Bridges, Their Design, Construction and Erection, 1923 and 1929; Suspension Bridges and Cantilevers; The Wichert Trnss; Famous Bridges of the World, 1948. Contbr. to A.S.C.E. Trans.; Ency. Britannica; Ency. Americana; Collier's Ency.; Assoc. Editor, Ency. Handbook Library, 1921-28. Gen. Int.: Registered Professional Engr. in N. Y., Ore., Ill., Maine, Iowa, Conn., Fla., Ohio, Nebr., Que., Ont., British Columbia, Puerto Rico, Ky., J. Mich.; Awarded J. James R. Croes Medal, 1919, Normal Medal, 1923 and 1951; Thomas Fitch Rowland Prize, 1929, all by Amer. Soc. Civil Engrs.; Artistic Bridge Awards, Amer. Inst. Steel Construction, 1930, 1932, 1937, 1938, 1939, 1942; Prize, Amer. Assn. Engrs. for "Vow of Service," adopted for Engrng. Profession, 1926; Alfred T. White Prize, Brooklyn Engrs. Club, 1934; Townsend Harris Medal for Professional Achievements, Assoc. Alumni of Coll. of the City of N. Y., 1934; Alumni Service Medal, 1936; Columbia Medal for Excellence, 1947; Egleston Medal, 1950; Presented with Silver Scroll for Contributions to Adv. of Engrng. by Eleven Engrng. Societies, 1932; Inventor, Improvements in Stereo-Photography; Presented 1952 with Highest Award of Natl. Soc. of Professional Engrs. for Distinguished Service for the Advancement of the Engrng. Profession and Devotion to Humanity.



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.S8

X-TG 140.S8 #19

A DREAM, A SONG, A PRAYER

By D. B. Steinman

A bridge of strength and grace in mystic blend

Embodies spirit treasures that transcend

The steel and stone. The builder's dream is there,

Each curve a song, each soaring line a prayer.

A dream, a song, a prayer—these three combine

To make the bridge a beacon and a shrine.

So with our lives, O Builder of our Span

Help us to weave these strands into Thy plan

In threefold blend: a dream to point the goal;

A song to lift the heart; a prayer, the soul!

Grant us these gifts of love, or life is bare;

Give us a dream, a song, a thankful prayer!

Reprinted from
Brooklyn Engineers' Club Bulletin
Issue of October, 1953

X-TG 140
·S8



FEB 5 1954

Messina Strait Suspension Bridge

to span 5,000 ft

D. B. STEINMAN, M. ASCE

Consulting Engineer, New York, N.Y.

(*Reprinted from December 1953 issue of* CIVIL ENGINEERING, *published and copyrighted by the American Society of Civil Engineers*)

TG 140
.S8

FEB 5
Copy

THE ACTIVITIES OF THE PROFESSIONAL ENGINEERS IN THE UNITED STATES OF AMERICA

by

Dr. D. B. Steinman, Consulting Engineer

President, L'Union Internationale des Ingenieurs Professionnels;
Founder and First President of the National Society of
Professional Engineers (U.S.A.)

Honorary Member of Hudson Chapter

(Presented at the International Congress of Professional Engineers, held at Paris, November 13-15, 1953)

In the United States of America, the Engineering Profession has attained a very high level of public recognition and esteem.

Registration Laws for Professional Engineers have now been enacted in *all* of the forty-eight states, also in the District of Columbia and in all of the territories of the United States. Through these registration laws, we have secured public and legislative recognition of the fact that Engineering *is* a profession, that Engineering is a *learned* profession, that Engineering is *one* profession.

The standard qualifying requirements for registration include character, professional education, professional experience, and the passing of written examinations.

There are now over 190,000 registered Professional Engineers in the United States. In addition there are over 40,000 certified Engineers-in-Training; these are engineering graduates who have passed their preliminary examinations for registration and who are waiting for the completion of their four-year experience requirement before they are admitted to the final examinations to qualify as Professional Engineers.

In each state, the registration of Professional Engineers and of Engineers-in-Training is administered by a State Board of Registration for Professional Examiners, or a State Board of Engineering Examiners. The work of these 52 State Boards is unified and coordinated by a National Council of State Boards of Engineering Examiners.

In 1934, after we had laid our strong foundation in New York State, we took the next step. We dreamed of a national organization of, by and for all engineers, dedicated to a great cause, namely a defined, integrated and unified Engineering Profession. It was my privilege to issue the call for the first organization meeting and to serve as the first president of the new-born National Society of Professional Engineers. I put my heart into it—all of my time and every ounce of my strength. During the following years I travelled many thousands of miles around the country, from Maine to Texas, on my own time and at my own expense, speaking before gatherings of engineers, before legislatures, at public meetings and conventions—advocating the enactment of registration laws, organizing new state societies, and preaching the gospel of Engineers' Registration, professional consciousness, and public service. The seeds we planted then have taken root, flourished, and borne fruit. We now have a National Society of 30,000 members, with 39 member State Societies, 300 local Chapters, and 3,000 committees of engineers—all working for the advancement of the engineering profession and for the highest ideals of service to the public. And we now have a strong and effective registration law for Professional Engineers enacted and functioning in every state of the United States. We have written high qualification standards into these registration laws, including high requirements of character, academic and professional education, high requirements of training and experience, written examinations, and high standards of professional conduct—all in recognition of our high obligation to the public as members of a trusted and distinguished profession.

We also have our national technical societies in the United States—over ninety of them—for the different branches and specialties of the profession. We have societies of Civil Engineers, Chemical Engineers, Radio Engineers, Mechanical Engineers, Sanitary Engineers, Electrical Engineers, Mining Engineers, Automotive Engineers, Agricultural Engineers, Aeronautic Engineers, and scores of others—each devoted to its own branch or specialty of knowledge and practice. But we have only *one* National Society of Professional Engineers, uniting all engineers for the advancement of their common interests in public recognition and esteem. It is the only society in the U. S. A. with membership limited exclusively to registered Professional Engineers. It is the only society in the U. S. A. uniting engineers of all branches of the profession. It is the only society in the U. S. A. devoted exclusively to *professional* activities, such as legislation, public relations, and professional recognition.

Our National Society of Professional Engineers, our State Societies, and our Local Chapters are closely integrated. A member of one unit is a member of all. Every member of the National Society is automatically a member of his State Society and of his Local Chapter.

X-TG 140
.S8

The Engineer: Building for Tomorrow

By **D. B. STEINMAN**

Internationally famous figure says science and engineering have made possible a golden era of progress such as civilization has never known

Reprinted from Rensselaer Polytechnic Institute Alumni News, July 1953

X-G 140
.S8

X-T6 NO. Sx #23

TO FRANCE

What is your magic spell, O France,
To throb our pulses with romance?
You bring the gift of love and song,
The breath of spring for which we long;
The sunshine where soft winds caress
To stir our dreams of happiness.
With beauty shrined in life and art,
France, you have given the world a heart!

And what is your flame of sacred light
Inspiring hope in darkest night?
With Freedom's battle flags unfurled
Your hero sons have thrilled the world.
They gave their lives to shape your plan —
To build the Brotherhood of Man.
Your noble dream is now our goal —
France, you have given the world a soul!

— D. B. Steinman.

Reprinted from "French-American Commerce"
July-August 1953 issue.

X-TG 140
.S8

X-TG 140.56 #24

SEP 26 1953

The Hartford Courant

Hartford | Connecticut

Established in 1764 - The oldest newspaper of continuous publication in America.

HERBERT BRUCKER - EDITOR

The poem you were good enough to send to The Courant was printed in the issue of

SEP 26 1953

A clipping is attached.

—Grace H. Loomis

The Dreamer

His dream-ship floats on seas of amethyst
And leaves a wake of star-flamed, sapphire foam.
The Dreamer stands on deck in lonely tryst
With mystic beauty of the star-filled dome.
As soft winds stir the sails toward far-off goals
The ship sways gently toward one side, and then
To lullaby of cradling waves, it rolls
In rhythmic cadence slowly back again.

The Dreamer sees the gleaming stars appear
In downward swing, until they seem to be
Almost within his reach, they come so near,
And then they draw away to apogee.
He may not grasp the stars as they pass by,
But sadder far would be a starless sky.

D. B. Steinman

New York, New York

X-TG 140
·S8

X-TG 140.S8 #25

The Hartford Courant

Hartford 1, Connecticut

Established in 1764 - The oldest newspaper of continuous publication in America.

HERBERT BRUCKER - EDITOR

The poem you were good enough to send to The Courant was printed in the issue of

SEP. 12 1953

A clipping is attached.

—Grace H. Loomis

Flight

With thunder of ten thousand fiery steeds
Our gleaming chariot leaps to skyward flight.
Through blue-domed space our winged transport speeds
Above the cumulus of drifting white.
We leave behind the tumult of the crowds;
The muffled engine throb is all we hear.
In sunlit peace we fly above the clouds
And find release from earthbound storm and fear.

With trust in pilot and his star-mapped plan
We wing our way to reach our sunset goal.
This magic power of flight achieved by man
Fulfills a soaring dream within his soul.
Man's dream has set his soaring spirit free
Between the clouds and all eternity.

D. B. Steinman

New York, N. Y.

.S8

#26

BRIDGES
in the United States

by

David B. Steinman, M.Am.Soc.C.E.

Reprinted from Road International No. 9, Summer 1953

X-TG 140
.S8

LES PROBLÈMES TECHNIQUES DANS LA RECONSTRUCTION DU PONT DE BROOKLYN

PAR

DAVID B. STEINMAN

X-TG 140 .S6 #27

X-TG 140
·58

Sonderdruck aus: DIE BAUTECHNIK 30. Jahrgang. Seite 178 bis 180 Heft 6 — Juni 1953
Verlag von Wilhelm Ernst & Sohn, Berlin-Wilmersdorf, Hohenzollerndamm 169

X-G 110 #58

Der Umbau der Brooklyn-Brücke in New York.

(Unter Verwendung eines Aufsatzes des amerikanischen Brückenbauers Dr. Steinman sowie nach eigenen Eindrücken von einer Studienreise im Sommer 1952.)

Die im Jahre 1883 nach 13jähriger Bauzeit vollendete Brooklyn-Brücke — die erste Hängebrücke, bei der Stahlkabel verwendet wurden — war in der damaligen Zeit unzweifelhaft eine geniale Ingenieurleistung (Bild 1). Darüber hinaus ist sie bis auf den heutigen Tag eine der schönsten Brücken New Yorks geblieben. Ihre Erbauer waren der aus Deutschland ausgewanderte J. A. Roebling und sein Sohn. Während ersterer schon bei den vorbereitenden Arbeiten im Jahre 1869 einen Unfall auf der Baustelle erlitt, an dessen Folgen er starb, konnte sein Sohn das Werk vollenden. Er zog sich jedoch beim Bau der Brücke durch zu langen Aufenthalt in den hölzernen Senkkästen die sogenannte „Caisson-Krankheit" zu, die seine frühe Lähmung und Paralyse zur Folge hatte (gestorben 1926).

Die Brücke hat eine Spannweite von 486,6 m und eine Gesamtlänge von 1060 m (Bild 2). Sie besaß bis 1951 6 Versteifungsträger, jedoch nur 4 Hängegurte (Bild 3). Zwei innere Versteifungsträger waren nicht aufgehängt, sie konnten deshalb lediglich als lastverteilende Längsträger angesehen werden. Jedenfalls war es sehr zweifelhaft, in welchem Umfange diese Träger sich an der Aufnahme der bewegenden Last beteiligten und wie sie bei der statischen Berechnung zu bewerten waren. Die Brücke hatte zunächst nur eine Fahrspur in jeder Richtung und außerdem 4 Gleise. Durch den Ausbau der beiden Straßenbahngleise im Jahre 1944 konnten 2 weitere Spuren für den Fahrverkehr gewonnen werden. Eine zweigleisige Vorortbahn verkehrte noch bis zum Jahre 1950. Der hochgelegene Fußsteg in Brückenmitte erfreut sich wegen der schönen Aussicht besonderer Beliebtheit bei der New Yorker Bevölkerung; er wurde deshalb auch beim Umbau der Brücke beibehalten.



Bild 1. Ansicht der Brücke vor dem Umbau, von Manhattan aus gesehen.

verkehr nunmehr 6 Spuren zu schaffen, jedoch wird die Brücke nach dem Umbau nur eine beschränkte Tragfähigkeit besitzen. Alle charakteristischen Merkmale des Bauwerkes, wie die monumentalen Türme (Pylonen) mit ihren gotischen Torbögen und die leicht geschwungene Führung der Versteifungsträger in der Flußöffnung, wurden bei dem neuen Entwurf beibehalten. Insbesondere wurde an der Art der Aufhängung nichts geändert. Roebling hatte schon in genialer Voraussicht bei diesem Bauwerk außer senkrechten Hängern auch Schrägseile verwandt in der gleichen Art, wie sie jetzt bei vielen (auch neueren) Hängebrücken nachträglich zur Erhöhung der Windstabilität eingebaut werden. Zur Erzielung einer möglichst großen Tragfähigkeit mußten vor allen Dingen die Versteifungsträger, die als Rautenfachwerke ausgebildet sind, umgebaut werden. Die nicht aufgehängten mittleren Versteifungsträger wurden entfernt, und die äußeren seither 2,67 m hohen Träger erhielten durch Aufstockung die gleiche Höhe wie die 5,20 m hohen Innenträger. Durch diese Maßnahme war es möglich, 2 Fahrbahnen von je 9 m, also insgesamt 6 Fahrspuren, zu schaffen (Bild 4). Mit der Aufstockung wurde erreicht, daß die seither nur etwa $10^0/_0$ zur senkrechten Aussteifung der Brücke heitragenden äußeren Versteifungsgurte nunmehr $50^0/_0$ tragen. Die beim Abbrennen der nicht aufgehängten Mittelträger gewonnenen oberen Gurtungen konnten als neue dritte Gurtung der Außenträger verwendet werden. Zwischen den beiden oberen Gurtungen wurde durch Einbau von Diagonalen ein Rautenfachwerk geschaffen, dessen Augenstäbe mittels Spannschlössern unter Verwendung genauer Spannungsmesser angespannt wurden. Obgleich die nicht aufgehängten Träger in bezug auf das gesamte System nur eine geringe Bedeutung hatten, trugen sie doch wesentlich zur örtlichen Verteilung schwerer Radlasten bei. Nach ihrem Fortfall wurde daher, um die Fahrbahnträger vor Überlastung zu schützen, ein neuer



Bild 2. Längsschnitt einer Brückenhälfte.

Bereits im Jahre 1903, also noch vor dem Aufkommen des Autos, konnte die Brücke kaum den Verkehr bewältigen, aber erst im Jahre 1934 erwog man ernsthaft den Umbau. Dr. Steinman stellte damals einen Entwurf auf, der unter Verwendung von Aluminium in doppelstöckiger Anordnung statt der vorhandenen 2 Fahrspuren 12 Spuren geschaffen hätte, ohne das Eigengewicht des Bauwerkes zu vergrößern. Dieser Plan konnte jedoch nicht verwirklicht werden, weil man die hohen Baukosten von 6,25 Mio Dollar scheute.

Erst 1951 wurde der Umbau, da mittlerweile die Verkehrsverhältnisse auf der Brücke untragbar geworden waren, nach anderen Plänen Dr. Steinmans in Angriff genommen, die die alte Konstruktion unter Verwendung von Stahl weitgehend beibehalten. Da mittlerweile der Aluminiumpreis auf mehr als das Doppelte angestiegen war, mußte der ursprüngliche Plan fallen. Es gelang zwar, für den Fahrlängslaufender Verteilungsträger unterhalb der Fahrbahn eingehaut.

Einzelheiten der Ausführung.

1. Fahrbahnplatte.

Die Brücke hatte ursprünglich eine leichte Fahrbahn aus Holzbohlen, die später jedoch durch Holzpflaster ersetzt wurden. Dieses konnte aber der Beanspruchung durch den riesigen Verkehr nicht standhalten, weil die Wagen wegen der Enge der Fahrbahn nur hintereinander fahren konnten. Da beim Umbau das ursprüngliche Eigengewicht der Brücke nicht wesentlich überschritten werden durfte, mußte eine leichte Fahrbahn gewählt werden. Die Verwendung einer normalen Stahlbetonplatte war wegen des hohen Gewichtes ausgeschlossen. Seitens der Unterhaltungsabteilung des Brückenbauamtes der Stadt New York wurde für die Flußöffnung zunächst

X-TG 140
·S8

BEAUTÉ DES PONTS

PAR

DAVID B. STEINMAN

X-TG 140 S8 #24

X-TG 140
.S8

X-TG140.S8 #30

BOSTON POST, MONDAY, AUGUST 24, 1953

Poems for Your Scrapbook

PARTNERS

BY D. B. STEINMAN

I planted a seed and added my love
To the sunshine and life that came from above.
I thrilled to behold how Thy magic power
Made each bud unfold as a beautiful flower.

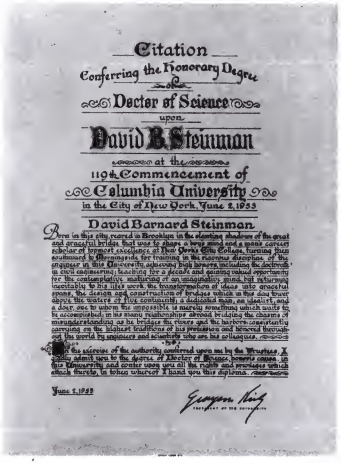
I groped for the music and words to impart
The gladness and longing that sang in my heart.
The stars brought Thy melody, lingering long,
And my heartstrings recorded the Heaven-born song.

I quarried the rock and carved it with care
To build a cathedral for worship and prayer.
My soul sang Thy story-compassion divine-
As I wrought in Thy glory a reverent shrine.

A flower, a song, or a soul-lifting shrine
My own share is humble, the magic is Thine.
Though lowly my part, I am thankful to be
Co-working in beauty as partner with Thee!

X-TG 140
.S8

Columbia University Citation Conferring Honors on D. B. Steinman, NYSSPE Trustee



Citation

Conferring the Honorary Degree

of

Doctor of Science

upon

David B. Steinman

at the

119th Commencement of

Columbia University

in the City of New York, June 2, 1953

David Barnard Steinman

Born in this city reared in Brooklyn in the stirring shadows of the great and graceful bridges that were to shape a busy mind and a quick curious scholar of topmost excellence at New York City College, turning then southward to Cincinnati for training in the extreme discipline of the engineer in this University, achieving high honors including the doctorate in civil engineering, teaching for a decade and gaining valued opportunity for the contemplative, maturing of an unquiddity mind, but returning inevitably to his life's work, the transformation of ideas into graceful spans, the design and construction of bridges which in the due course adopt the texture of civic continuity, a dedicated man, an idealist, and a doer, one to whom the impossible is merely something which waits to be accomplished, in his every posthumous devoted bridging the chasms of misunderstanding as he bridges the rivers and the harbors, constantly surveying on the highest feasibilities of his profession and blessed therewith and the world by engineers and scientists who are his colleagues.

By the exercise of the authority conferred upon me by the Trustees I hereby admit you to the degree of Doctor of Science, honoris causa, in the University and confer upon you all the rights and privileges which attach thereto, in token whereof I hand you this diploma.

June 2, 1953

Reprint from New York Professional Engineer, July-August 1953

X-TG 140
.S8

X-TG 140.S8#32

I Built A Bridge

By D. B. Steinman

I built a bridge across the tide
To reach the distant shore,
And there I roamed through fairer glens
Than I had known before.

I built a bridge across the vale
To reach the sunny slope;
With singing heart I built the span—
A rainbow arch of hope.

I built a bridge across the gulf
To reach my fellowman;
I found in him a kindred spark—
He helped me build the span.

I built a bridge across the years
To reach tranquility:
I did not know how beautiful
The last of life could be.

I built a bridge across the dark
To reach the unknown shore,
And there I found supernal love
And peace forevermore.

Reprinted From
The Registration Bulletin
June, 1953

X-TG 140
·58

X-TG140.58 #33

A Dream, A Song, A Prayer

By D. B. Steinman

A bridge of strength and grace in mystic blend
Embodies spirit treasures that transcend
The steel and stone. The builder's dream is there,
Each curve a song, each soaring line a prayer.
A dream, a song, a prayer—these three combine
To make the bridge a beacon and a shrine.

So with our lives, O Builder of our Span
Help us to weave these strands into Thy plan
In threefold blend: a dream to point the goal;
A song to lift the heart; a prayer, the soul!
Grant us these gifts of love, or life is bare;
Give us a dream, a song, a thankful prayer!

Reprinted From
The Registration Bulletin
June, 1953

X-TG 140
.S8

X-TG140 .S8 #34

THE NEW YORK TIMES, THURSDAY, JUNE 18, 1953.

THE SONG OF THE BRIDGE

With hammer-clang on steel and rock
I sing the song of men who build.
With strength defying storm and shock
I sing a hymn of dreams fulfilled.

I lift my span above the tide
And stand where wind and wave caress.
I bear the load so men may ride
On rainbow road to happiness.

The light gleams on my strands and bars
In glory when the sun goes down.
I lift a net to hold the stars
And wear the sunset as my crown.

D. B. STEINMAN.

X-TG 140
.S8

X-TG 140 S8 # 35

BRIDGES

by

D. B. Steinman

Reprinted from Collier's Encyclopedia, 1953

X-TG 140
·58

D. B. STEINMAN

(Riassunto da RICCARDO CANTONI con la cortese autorizzazione dell'Autore)

Il ponte di Brooklyn e la storia di due valorosi ingegneri

Estratto dalla Rivista "COSTRUZIONI METALLICHE„ *N. 1-2 - 1953*

The Faith of an Engineer

A Message for Young Engineers

By D. B. Steinman
Consulting Engineer, Past President and Life Member A.A.E.

The Engineer is a builder. He builds his dreams and the dreams of his fellowmen into enduring realities.

There is a beautiful and impressive legend—so old that its origin has been forgotten. It goes like this:

Four men stood up with God when he made the world. They saw the nebulous mass take form under the hand of the Creator; and they watched with wonder as the shimmering sphere, flung from the fingers of Omnipotence, found its place in the shining galaxy of stars.

Blinded by the sublime spectacle, the men fell down in humble worship. And God said to them: "Rise, and fear not." And they rose and faced the Master with the new-born questions and ambitions that fired their souls.

And one of the men asked: "How was it done?" and God replied: "Go, find out for yourself." And that man went and became the *Scientist*.

"Give it to me," the second man begged. And God said to Him: "Go, possess it for yourself," and he went and became the *Business Man*.

"How beautiful!" exclaimed the third man. To him God said: "You shall go and, because your soul burns within you, you shall create Beauty!" And that man went and became the *Artist*.

The fourth man said nothing but, as his eyes followed the unfolding of the plan of Creation, there kindled in his heart a desire to do these things. And to him God said: "You, too, shall go, and you shall plan and build. You shall learn to master the forces I have called forth, and you shall *continue the work of Creation!*" And that man went and became the *Engineer*.

And thus this noble group of God's Journeymen set out upon their appointed tasks. The Engineer ran before the others to straighten the path for their feet. He blazed the trail through trackless forest and impenetrable jungle, over jagged mountains and across torrential streams. He cleared away obstacles, broke down barriers, and spanned the chasms that halted their progress. He explored the far places and the depths of the Earth for the materials the Journeymen needed, and he fashioned the tools for their work. He devised shelters to protect them from the elemental forces of Air, Earth, Fire and Water, and he harnessed these to lighten the toil of Man. With head and heart and hand, he wrought and contrived to ease the task of his fellow Journeymen and to multiply the fruits of their labors.

With the Truths discovered by the Scientists, the Wealth garnered by the Business Man, and the Beauty dreamed by the Artist, the Engineer performed ever greater miracles—rearing the resplendent structure of Civilization and Human Progress.

And thus the Engineer goes on through the ages—overcoming obstacles, conquering new forces, and reshaping the physical world. Unsparing of his energy, he plans and toils to create comfort, wealth and happiness for his fellow-wayfarers. He is the pioneer and the leader in the onward march of Civilization.

With the successful achievement of each new monumental task, the Engineer has grown in strength, and greater responsibilities and tasks have been entrusted to him. Today he has to be Scientist, Artist and Business Man, as well as Engineer. All four are now embodied in him and find expression in his creative genius. He works from vision to deed, and he applies Science and Business and Art in building his dreams into enduring realities. He plans and builds not only for his time, but for the generations to follow.

Every man's philosophy of life is the product of his experiences. This is especially true of the professional man. His faith, his dedication, and his devotion to his profession are the products of the experiences that have shaped his life.

To me Engineering has been a succession of inspiring influences, of impelling ambitions, of obstacles overcome, and of dreams come true. The realization—one after another—of dreams that seemed hopeless leaves me reverent and humble.

My career in bridgebuilding is a boy's dream come true. I grew up in the shadows of the Brooklyn Bridge. As a boy, I loved to walk over the span and to explore its marvels. I was awed by its vastness, by the majesty of the towers and by the power of the cables; and I was fascinated by all the details of the construction—the anchorages and the cables, the trussing and the beams, the stonework of the towers, and the magic of the radiating stays. I came to know the great structure intimately and reverently. To me it was truly a "miracle bridge"; and, as I wondered how so marvelous a work could have been created, I was fired with the ambition to become a builder of bridges. In a background of poverty, this far-flung ambition seemed beyond the possibility of attainment. But the inspiration of the bridge had entered my heart, and my dream came true!

An important element in life is loyalty. Our lives are shaped by our loyalties—to our family, our friends, our school, our church, our profession, our community, our country—but one loyalty I would place high in the list is *loyalty to our youthful ideals*. Only by keeping to our goal of inspiration can we scale the heights.

From my earliest experiences I formulated a guiding philosophy of life crystallized in two simple propositions.



DR. DAVID B. STEINMAN

internationally known consulting engineer, president of the New York Academy of Sciences, author, lecturer, and inventor, has a magnanimous record in the financial help and inspiring encouragement he has given college students.

Since 1920, he has been in private practice and has served as designing or consulting engineer in the construction of many notable bridges on five continents.

He is a life member of the American Association of Engineers, and a past president.

The first is this:

"There is no excellence without effort."

The second is equally simple:

No true effort is ever wasted."

To these I may add a correlated truth that has always been in my consciousness: *"The world makes way for the man who knows what he wants"*—provided he is willing to pay the price in toil and striving and sacrifice.

In whatever we do—in whatever we build—beyond the stone and the steel, the calculations and the plans—the one priceless ingredient is *the spirit of consecration*. That includes the qualities of vision, devotion, inspiration, and integrity.

The whole thought is beautifully expressed in the words of John Ruskin:

"Therefore when we build, let us think that we build forever. Let it not be for present delight, nor for present use alone. Let it be such work as our descendants will thank us for, and let us think, as we lay stone upon stone, that a time is to come when those stones will be held sacred because our hands have touched them, and that men will say, as they look upon the labor and wrought substance of them, 'See, this our fathers did for us.' "

(Reprinted from the August 1953 issue of Professional Engineer)

X-TG140.S8 #38

TURNING POINT — PROFESSIONAL ENGINEERS

By Leslie Wax

The recent appointment of Dr. James F. Fairman to and the retirement of Dr. David B. Steinman from the Board of Examiners of Professional Engineers and Land Surveyors mark a turning point in the engineering profession.

For a long time, the engineer has been fighting for recognition. It has been a struggle against formidable obstacles. Real and tangible progress has been accomplished through registration of engineers. However, legal recognition of the qualified engineer through the medium of the license was only a step in the right direction. Not only the public but the vast, heterogeneous group of men who called themselves civil engineers, electrical engineers, chemical engineers, etc., had to be sold on the idea that they are all of one profession.

That goal has been reached. The engineer has become professional minded. With the profession solidly behind the registration laws, which are now a reality in every one of our 48 states, the emphasis has shifted from unity in our ranks to conformance by those who still practice without benefit of the P.E. License. From now on ethics and practice instead of unity and recognition shall be the keynote of the profession.

Dr. Steinman has been a tireless warrior in the battle for unity and recognition. His was a lifetime of unselfish devotion to the cause. He contributed his untiring effort at great personal expense so that one day the engineer may take his rightful place in society. That day has come. After a tumultuous quarter century of pushing forward. D. B. Steinman is tired. Giving thought to his own welfare at long last, he has formally retired from all extra curricular activities so that he may take a well earned rest.

Jim Fairman is more than a logical successor to Doc. Steinman on the Board of Examiners. He is ideally suited for the honored position, having been closely associated with the movement that raised the profession to the position it enjoys today. Jim has lived the P.E. story. He is the man for the team that has the great responsibility of administering the all important laws governing the practice of professional engineering in New York State.

We salute Doc. Steinman and Jim Fairman, both Fellow Members of long standing in the Brooklyn Engineers Club, for the credit reflected upon our organization.

In addition to the citation presented by the New York State Society of Professional Engineers to Dr. David B. Steinman on the occasion of his retirement from the Board of Examiners of Professional Engineers and Land Surveyors, the Doctor is the recipient of a more recent award.

On October 5, 1953, the University of Ghent, Belgium, conferred upon him the honorary degree of Doctor. The hood, diploma and medal, symbolic of this degree, are being forwarded. Dr. Steinman was represented at the ceremonies by Dorothy Moore Deflandre, Assistant Cultural Officer in the Foreign Service of the United States at Brussels, Belgium.

Reprinted from Brooklyn Engineers' Club Bulletin—Issue of Dec. 1953

X-T6140 S8 #39

TURNING POINT — PROFESSIONAL ENGINEERS

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Reprinted from Brooklyn Engineers' Club Bulletin—Issue of Dec. 1953

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THE MESSINA STRAITS BRIDGE

To Connect Sicily with Italy

By Dr. David B. Steinman, M.Am.Soc.C.E.

Reprinted from Road International No. 11, Winter 1953

CHRISTMAS MAGIC

By D. B. STEINMAN

THE star-shaped snowflakes softly fall
To deck each bough with sparkling white.
With magic wand the stars are hung
Like jewels of celestial light.
The treetop holds, as crowning gem,
The glowing Star of Bethlehem!

Once shepherds saw the wondrous Light;
Beside a crib they knelt in prayer.
The humblest hearth now glows with Love
Because His gift—a Child—is there!
The angel voices sing again:
Peace on Earth, Good Will to Men!

Reprinted from the
December 1953 issue of
PARTNERS
The Magazine of Labor and Management

X-TGMD-X #42

GOD IS LOVE

By D. B. STEINMAN

THE most beautiful truth in the Bible is a simple sentence of three words:

"God is love."

In this simple sentence, each word is significant. The three, taken together, express the most beautiful message ever given to mankind. In these three words we have the essence of religion. In these wonderful words we have the meaning of Christmas:

"God is love."

On that radiant Christmas night in Bethlehem, long, long ago, a new Light came into the world. Shepherds, kings and wise men, following the Star, came to the humble scene and knelt in adoration. They brought their gifts of worship to the new-born Child, for their hearts told them that here was God's priceless gift to humanity, God's gift of Light and Love. For this Child was to bring a divine revelation to the world, the message of the Fatherhood of God, the Brotherhood of Man, and the light-giving truth that *"God is love."*

The Child born in Bethlehem became the young Carpenter of Nazareth, and then the Teacher in the hills of Galilee.

When men came to Him and asked Him to state the essentials of religious faith, He summarized all religion in two commandments:

"Thou shalt love the Lord thy God with all thy heart and all thy soul."

"Thou shalt love thy neighbor as thyself."

He made Love the essence of religion:

"This is my commandment, that ye love one another as I have loved you."

Love was the core of His teaching, and He brought God into the human heart. He said:

"For behold, the kingdom of God is within you."

In words prophetic of His own supreme sacrifice, He said:

"Greater love hath no man than this, that a man lay down his life for his friends."

Yes, the Light that was born that Christmas day in Bethlehem was God's priceless gift to humanity. The herald angels sang His glory. Their message was a hymn to *"the God of Love and Peace."*

With the spirit of Christmas in our lives and in our hearts, we are living testimony that:

"God is love."

Reprinted from the
December 1953 issue of
PARTNERS
The Magazine of Labor and Management

TG 140
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THE MUNICIPAL ENGINEERS JOURNAL

Vol. 39 FOURTH QUARTERLY ISSUE 1953

ENGINEERS HONOR DR. STEINMAN FOR A QUARTER-CENTURY OF PROFESSIONAL LEADERSHIP

On Friday evening, October 2, at the Fall Convention of the New York State Society of Professional Engineers held at Bear Mountain Inn, a testimonial dinner was given by the Society in honor of Dr. David B. Steinman, M.M.E.N.Y., world-famous bridge engineer of New York City, to mark a quarter-century of his outstanding leadership and dedication in self-sacrificing service for the profession and the public.

The immediate occasion was Dr. Steinman's retirement from his office and membership on the State Board of Examiners for Professional Engineers, on which he had served with distinction for more than 24 years. The celebration in his honor also marked his completion of 25 years of leadership of the State Society during which period he also founded the National Society of Professional Engineers and helped to secure the enactment and strengthening of Engineers Registration Laws, in state after state, for the protection of the public and for the advancement of the standards and the standing of the engineering profession.

K-TG 140
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THE BOSTON DAILY GLOBE—WEDNESDAY, DECEMBER 30, 1953

Brooklyn-Staten Is. Bridge Proposed, Engineer Says

Two of the world's most famous bodies of water may soon be bridged with tremendous spans, Dr. David Barnard Steinman, famed bridge engineer of New York, said last night.

One proposed bridge would cross the Narrows in New York Harbor from Brooklyn to Staten Island, the other would link Italy with Sicily over the two-mile gap of the Messina Straits.

Dr. Steinman, noted for his work on correcting dangerous oscillations of suspension bridges, last night was awarded the $1000 William Procter Prize for Scientific Achievement.

He was presented the award after he had given the annual address of the Scientific Research Society of America at the AAAS meeting.

The Narrows Bridge would have a main span of 4620 feet. The main span of the George Washington Bridge is 3500 feet.

The bridge crossing the Messina Straits would have a main span of approximately 5000 feet and with approaches would be approximately two miles long, he said.

Dr. Steinman, designer or consultant engineer on many of the world's most famous bridges, including the Triborough and Henry Hudson Bridges in New York and the Deer Isle and Waldo-Hancock Bridges in Maine, said he strives to have both scientific design and artistic design in his great structures—"the scientific for greater economy and safety" and the artistic for esthetic reasons.

At present he is connected with the building of the $99,800,000 Mackinac Straits Bridge in Michigan, which will be five miles long.

'Bridge Aerodynamics'

In his address he told of his work in a field he has termed Bridge Aerodynamics, "a new science," dealing with problems of swaying and oscillations of suspension bridges.

He spoke of his intensive work in this field, which zoomed into importance when the Tacoma Narrows Bridge collapsed in 1940 by "cumulative amplification of oscillations in a mild gale" four months after it was completed.

"It has required the creation of a new science, combining the essentials of three different fields of specialized knowledge—the deflection theory of suspension bridges, the mathematical theory of vibration analysis and the science of aerodynamics," he said.

Dr. Steinman, president of the New York Academy of Science, was presented the award by Dr. Joseph W. Barker, president of the Research Corporation.

The prize was established by the late William Proctor of Bar Harbor. Among previous recipients were Dr. Karl T. Compton, chairman of the corporation of M. I. T., and Dr. Shields Warren of the Cancer Research Institute, New England Deaconess Hospital.

X-TG 140
. 88

THE BOSTON HERALD, WEDNESDAY, DECEMBER 30, 1953

Dr. Steinman Wins Scientific Prize

The William Procter Prize for Scientists Achievement last night was awarded Dr. David Barnard Steinman of New York, bridge engineer, at the Scientific Research Society dinner in Hotel Statler.

The $1000 award was established by the late William Procter of Bar Harbor, Me., a founder of the society. Winners in past years have included such famous scientists as Dr. Karl T. Compton, corporation chairman of M.I.T.; Dr. Shields Warren of the Cancer Research Institute, New England Deaconess Hospital, and Dr. Ernest O. Lawrence, Nobel Prize winner and University of California scientist.

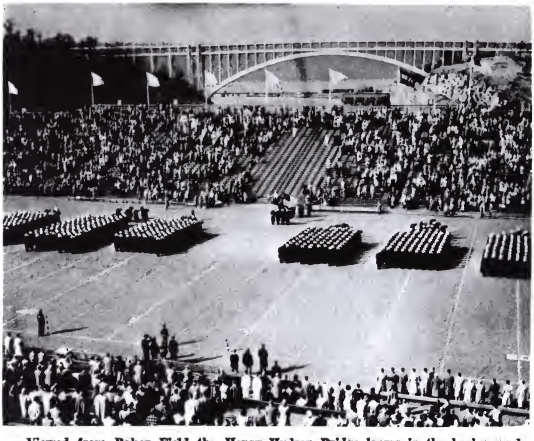
Dr. Steinman has designed or engineered some of the world's greatest bridges, including the Waldo-Hancock and Deer Isle bridges in Maine, the Charter Oak bridge at Hartford, Ct., and the Tri-Borough and Henry Hudson bridges in New York.

X-TG 140
.S8

NEW YORK WORLD-TELEGRAM AND SUN, SATURDAY, NOVEMBER 21, 1953.

Dreams+Steel+Youth=One Bridge

Student's Old Thesis Becomes the Lofty Henry Hudson



Viewed from Baker Field the Henry Hudson Bridge looms in the background, a monument to a student's dream.

The Henry Hudson Bridge, spanning Spuyten Duyvil creek from Manhattan to the Bronx, stands as a monument to a student's dream of success.

When the Columbia-Rutgers football fans at Baker Field today look westward to the towering span they will see the result of a Columbia engineering student's thesis come to life.

David B. Steinman, a builder of bridges on five continents and currently director of the renovation of Brooklyn Bridge, designed the Henry Hudson Bridge in 1909 as the thesis for his master's degree in civil engineering at Columbia.

Filed and Forgotten.

The thesis, having earned its designer the mark of 100 percent, was filed away and forgotten. Dr. Steinman went on to earn his Ph.D. in civil engineering and later took a job designing elevated structures for the city's transit system.

It was 25 years later, after he had set up his own consulting firm, that he was asked to design a bridge for the same spot over Spuyten Duyvil. Out came the student's thesis, which called for a two-deck steel arch bridge.

Won Award in 1936.

"My early thinking on the aesthetic design of the bridge, reinforced and matured by the subsequent years of application, came in good stead," Dr. Steinman says. Completed in 1936, the structure was honored in the annual artistic bridge awards for that year.

Depression-seasoned bankers who financed the span were fearful of the financial success of a toll bridge and decided the width should be cut in two. But Dr. Steinman provided for the upper deck and one month after the bridge opened traffic was so heavy he was ordered to complete it

X-TG 140
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X-TG 140.S8 #4

THE NEW YORK STATE SOCIETY
OF
PROFESSIONAL ENGINEERS

Presents this

C I T A T I O N

to

DAVID B. STEINMAN, P. E.

In recognition of his distinguished and dedicated service for almost a quarter of a century, 1929-1953, as a member of the Board of Examiners of Professional Engineers and Land Surveyors of the State of New York, of which he also served as Chairman, 1933-35, 1941-43, 1945-47.

While establishing an international reputation as a Consulting Engineer, he has drawn unstintingly on his great capacities and energies to share his uncommon professional, technical, and intellectual acumen in the service of the Board of Examiners, as well as for the advancement of Professional Engineering throughout the length and breadth of our Land.

During this period he also served with distinction as President of our State Society, 1930-33, and as a founder and first President of our National Society of Professional Engineers, 1934-36.

A Gentleman, Scholar, Educator, Soldier, Inventor and Author, he has been the recipient of many international honors and awards, and many honorary degrees have been conferred on him.

This Citation is presented to Engineer Steinman on the occasion of his retirement from the Board of Examiners as a symbol of our Society's highest esteem and deep gratitude.

October 2, 1953

X-TG 140
.S8

American Bridge
nnel and Turnpike Association, Inc.

Reprinted from the **December 1953 QUARTERLY**

Mackinac Straits Bridge

The sale by the Mackinac Bridge Authority of its $99,800,000 issue of Bridge Revenue Bonds marked the beginning of final realization of this massive project to bridge the deep waters of the Straits of Mackinac separating the Upper and Lower Peninsulas of the State of Michigan. It is also a tribute to the faith and determination of former U. S. Senator Prentiss M. Brown, chairman of the Bridge Authority. Senator Brown persisted in efforts to complete financing at this time in the face of pessimistic estimates on all sides.

The bridge will cross the Straits of Mackinac from Mackinaw Point on the Lower Peninsula, directly northward to St. Ignace on the Upper Peninsula (March *Quarterly*). It will be the longest suspension bridge in the world between anchorages — 8,614 feet — and the main span will be 3,800 feet long, second only to the 4200 ft. main span of the Golden Gate Bridge at San Francisco. It will be 68 feet wide and carry 4 lanes of traffic and a pedestrian walk. In addition there will be 8.267 feet of approach roads and viaduct structures for an overall project length of about 5¼ miles.

$70,235,000 Contracts Awarded

Contracts awarded by the Bridge Authority last March, pending successful financing arrangements, will now cost $70, 235,000. $25,735,000 will be for substructure work involving construction of 34 water piers varying from 50 feet to 200 feet below mean water level; steel superstructure work including 9,304 feet of varying length truss beams and the 8,614 foot suspension bridge, will cost $44,500,000. This totals to an increase of over $4,000,000 since last spring. Another $4,500,000 will go for approaches, roadways, buildings and similar work. Orders for steel have already been let and construction should be under way in March. Target date for bridge opening is November 1, 1957.



Proposed Mackinac Straits Bridge will cross a gorge 300 feet deep. Discussed since 1880, it will cut crossing time between the Upper and Lower Michigan Peninsulas from 53 minutes to 10. Designer is D. B. Steinman.

A four-member group headed by Allen & Co., and including Union Securities Corp. A. C. Allyn,& Co., and Stifel, Nicolaus & Co., bid 96.0501 for $79,800,000 of 4 percent, Series A, and $20,000,000 of 5¼ percent Series B bonds. The maturity date is January 1, 1994 but traffic and revenue estimates have indicated they may be retired about ten years before that date. A syndicate of more than 250 firms is being organized to handle the issues. It is expected Series A will be offered in the market about January 14, 1954 while Series B will be held by the underwriters. The bonds are secured solely by bridge revenues which will also pay the costs of operation, maintenance and repair of the bridge, excepting that the State of Michigan has passed legislation to pay yearly maintenance costs of up to $417,000 from state highway department funds. It is estimated that this cost will run about $390,-000 in the first year.

Bridge revenues are expected to be about $5,935,000 during 1958, climbing up to over $16,700,000 a year by 1993. Tolls will average about $2.60 per vehicle; a passenger car and driver paying $2.00, plus 25¢ for each passenger.

The Mackinac Bridge Authority is composed of Senator Prentiss M. Brown, chairman, and members Mead L. Bricker, William J. Coleman, Charles T. Fisher, Jr., George A. Osborn, Murray D. Van Wagoner and state highway commissioner Charles M. Ziegler. Secretary of the Authority is Lawrence A. Rubin.

Dr. D. B. Steinman is designer of the bridge and will supervise construction. Associated with him is Glenn B. Woodruff. Coverdale and Colpitts are consultants on traffic and revenue studies.

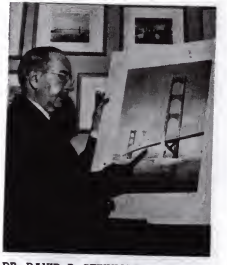
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APR 27 1954

the transit
of Chi Epsilon

National Civil Engineering Honor Fraternity

TG 140
.S8 #49



DR. DAVID B. STEINMAN, recipient of nine honorary degrees during the past commencement season, is seen viewing an artist's drawing of the bridge he designed to span the two-mile-wide Strait of Messina between Sicily and the Italian mainland.

Reprinted From —

Volume 25 • FALL, 1953 • Number 2

X-TG 140
.S8 #50

BULLETIN

OF THE

VIRGINIA POLYTECHNIC INSTITUTE

Engineering Experiment Station Series No. 84

PART 1

PIPELINE BRIDGE STABILIZED WITH DIAGONAL ROPE STAYS

PART 2

WIND TUNNEL MODEL TESTS OF COOSA RIVER PIPELINE BRIDGE

X-TG 140 #51
.S8

GATEWAY BOOKS

RANDOM HOUSE, 457 Madison Ave., N. Y. 22

Five New Gateway Books Are Launched in 1953

The GATEWAY BOOKS make their appearance in the Fall of 1953 as one of the dramatic new publishing ventures of Random House. These books are written to answer the insistent questions of nine to twelve-year-olds about the history and development of man's struggle to build better facilities for travel and communication throughout the world.

Exciting, colorful, authentic—the new GATEWAY BOOKS tell of the transportation and communication gateways of the world. . . . The bridges over which flow the world's people and their goods. . . . The railroad terminals through which pour passengers and freight. . . . The harbors where railroads and shipping lanes meet.

Whether they are natural gateways like the harbor of Hong Kong or man-made gateways like the Polar airport of Thule, they are the nerve centers of the world. To read about them is to feel the smallness of our modern world and to understand the growing interdependence of its people.



X IG 140
#52

CHRISTMAS SYMPHONY

a poem

By D. B. STEINMAN

Reprinted from the
December 1954 issue of

PARTNERS
The Magazine of Labor and Management

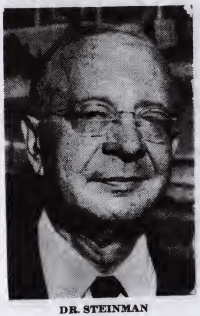
X-TG 140 #53
SS

Dr. Steinman Commencement Speaker At MCMT, Houghton

HOUGHTON — Dr. David B. Steinman, internationally eminent bridge engineer and scientist, whose genius lies behind the proposed Straits of Mackinac Bridge, will deliver the commencement address at the Michigan College of Mining and Technology, according to Dr. Grover C. Dillman, president of the college.

Dr. Steinman has designed and built over 300 bridges on five continents, and six of his bridges have been honored in the Annual Artistic Bridge awards for the most beautiful bridges in America. He has received numerous honors and awards from engineering and scientific bodies in th's country and abroad, including ten honorary doctorates, as well as a number of decorations and honors from foreign countries. Dr. Steinman has achieved recognition as an engineer, scientist, mathematician, artist, inventor, bridge-builder, educator, lecturer, author, poet, and humanitarian.

Michigan Tech expects to graduate 218 seniors this year as well as to tender 15 advanced degrees. The graduation ceremony will be held on the college's Houghton campus at 2:30 p.m. on May 23.



DR. STEINMAN

Reprinted from the April 29, 1954 issue of The Evening News, Sault Ste. Marie, Michigan

X-TG 140 #54
Sp.

UNIVERSITÀ INTERNAZIONALE DEGLI STUDI SOCIALI
FACOLTÀ DI SCIENZE ECONOMICHE E COMMERCIALI
INDIRIZZO PER LE CARRIERE PRODUTTIVE
ROMA - VIA CASTELFIDARDO, 47

MANIFESTAZIONI CELEBRATIVE DEL PRIMO DECENNIO DELLE ATTIVITÀ ACCADEMICHE

PRIMO FORUM INTERNAZIONALE SUL NUOVO DINAMISMO DELL'INIZIATIVA PRIVATA:

"L'INVESTIMENTO PRIVATO ITALO-AMERICANO NEL PONTE CALABRO-SICULO È NECESSARIO PER IL PROGRESSO ECONOMICO-SOCIALE DEL MEZZOGIORNO?,,

Hanno parlato nel Forum Internazionale del 6 luglio, alle ore 18: nell'Aula Magna del PONTIFICIO ATENEO ANGELICUM Salita del Grillo, 1 - Roma: il Dr. Ing. D. B. STEINMAN di New York, ideatore e promotore del più grande ponte del mondo sullo Stretto di Messina; S. E. l'On.le SALVATORE ALDISIO, promotore dello sviluppo autonomo della Regione Siciliana; il Dr. Ing. MARIO PALMIERI e Dr. ANDREW FARNESE di Philadelphia.



Per onorare una lunga vita totalmente dedicata al trionfo di una idea, il Rettore ha consegnato, in questa occasione, al Dr. Ing. D. B. STEINMAN, Master of Arts (professore di ingegneria civile) e Philosophiae Doctor dell'Università Columbia di New York

UN DIPLOMA DI BENEMERENZA CON MEDAGLIA D'ORO.

L'ALTERNATIVA DEL REALISMO SOCIALE: UN NUOVO DINAMISMO DELL'INIZIATIVA PRIVATA

DEL M. R. P. FÉLIX A. MORLION O. P.

La causa profonda del comunismo in Italia non è la miseria materiale, bensì un fenomeno di passivismo e pessimismo sociale. Sempre inventivi ed abili a cavarsela nei fatti individuali, troppi italiani hanno preso l'abitudine di piegarsi davanti ai fatti sociali: « non è mio compito, aspettiamo che il Governo faccia qualcosa! ».

L'alternativa più rumorosa è dunque divenuta un sempre più ampio rigettare le responsabilità sociali sullo Stato anonimo ed una tentazione sempre più diffusa di sottrarsi alle proprie personali responsabilità davanti al bene sociale. Anche i dirigenti politici sono coscienti del fatto che, più dell'agnosticismo politico, è l'immobilismo economico e sociale che potrebbe portare alla tragica capitolazione davanti allo statalismo totalitario del comunismo.

La lotta contro l'alternativa comunista e socialista non si può vincere con soli trattati e discorsi perchè i demagoghi, specializzati nel dipingere paradisi prefabbricati nell'immaginazione e nel demolire risultati raggiunti nella realtà

X-TG 140
S8 #55

SUSPENSION BRIDGES— THE AERODYNAMIC PROBLEM AND ITS SOLUTION

by

D. B. STEINMAN
Consulting Engineer

Reprinted from

THE MUNICIPAL ENGINEERS JOURNAL
Vol. 40 FIRST QUARTERLY ISSUE 1954

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S8 #56

OPENING OF MODERNIZED BROOKLYN BRIDGE

MAY 3, 1954

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X-TG 140
S8 +

Suspension Bridges:

The Aerodynamic Problem and Its Solution

★

By D. B. STEINMAN

CONSULTING ENGINEER
NEW YORK, NEW YORK

Presented as the Annual Address of the Scientific Research Society of America at the 1953 Annual Meeting of the American Association for the Advancement of Science, in Boston.

Awarded the 1953 William Procter Prize for Scientific Achievement by the Scientific Research Society of America, on December 29, 1953.

X-16 140
S8 #58

AN ADDRESS

by

DAVID BARNARD STEINMAN

X-16 140

S8 #59

Reprinted from

"WHO'S WHO IN ENGINEERING"

7th Edition—1954

STEINMAN, David Barnard, Cons. Engr., 117 Liberty St., N. Y. City; res. 305 Riverside Drive, N. Y. City.

Bridge Engr.; b. N. Y. City, June 11, 1886; ed. C. C. N. Y., B.S. (summa cum laude), 1906; awarded 12 medals and 3 yrs. fellowship in Mechs.; Columbia Univ. Sch. Engrg., C.E., 1909; awarded 2 yrs. scholarships in Applied Sci.; Columbia Univ., A.M., 1909; awarded 1 yr. grad. scholarship in engrg.; Ph.D., Columbia Univ., 1911; mem. Phi Beta Kappa; m. N. Y. City, 1915, Irene Hoffman; ch.: John Francis, Alberta, David. Miscel. engrg. wk., 1906-10; cons. engr. & prof. C. E., Univ. Ida., 1910-14; spl. asst. to Gustav Lindenthal, on Hell Gate Arch Bridge, N. Y. City, and other bridges, 1914-17; prof. C. E. & M. E., C. C. N. Y., 1917-20; cons. engr., bridge wk., 1920 to date, incl. bridges at: Florianopolis (Brazil) suspension (largest bridge in S. A.); Carquinez Strait (Calif.) cantilever; Mt. Hope (Bristol, R. I.); Waldo-Hancock (Penobscot Riv., Me.); Grand'Mere (Que.); St. Johns (Portland, Ore.); Sky Ride & Obs. Towers, 1933 Chicago Expn.; Triborough; Henry Hudson (N. Y. City) arch; Thousand Islands (joining U. S. and Canada); Deer Isle (Maine); Marine Parkway (N. Y. City); Vancouver (B. C.); Deegan Blvd. Express Hwy., N. Y. C., 1945-50; Martin Pena Channel Bridge, P. R. 1950-51; Kingston-Rhinecliff Bridge over Hudson River, N. Y.; reconstrn. of old Brooklyn Bridge, N. Y. 1948-51; Rte. 4 Pkway. and Rte. 4 Bridges, N. J.; proposed bridge across Messina Strait, Italy; Mackinac Straits Bridge, Mich. 1950-53; Raritan River Bridge, N. J.; reconstrn. of Manhattan Bridge, N. Y.; and others in 5 continents; lecturer on bridge des. at many colls. and univs. Awards and honors: Silver scroll from 11 engrg. socs. for contributions to advancement of engrg. 1932; Thomas Fitch Rowland Prize, Am. Soc. C. E. 1929; J. James R. Croes Medal, Am. Soc. C. E. 1919; Norman Medal, Am. Soc. C. E. 1923 and 51; Artistic Bridge Awards: Am. Inst. Steel Constrn. 1930, 32, 37, 38, 39, 42; Townsend Harris Medal 1934 and Alumni Service Medal 1936 from Assoc. Alumni of C. C. N. Y.; Alfred T. White Prize, Brooklyn Engrs. Club 1934; Prize for Vow of Svc., adopted for engrg. profs., Am. Assn. Engrs. 1926; medal for outstanding civic constbn. (reconstrn. of Bklyn. Bridge) by Greater N. Y. Civic Center Assn. and 15 civic, archit. and scientific orgns. 1950; highest award of N. S. P. E. 1952; testimonial Scroll by Alumni and Friends of Madison House 1952; Distinguished Service Scroll, Nat. Council State Bds. of Engrg. Examiners 1949; Cert. of Cooperation, U. S. Mutual Security Agency 1952; Eloy Alfaro Cross, Republic of Panama; Hon. D. C. E. Univ. Bologna, Italy 1933; D. Sc. Minerva Univ., Italy 1953; Hon. D. Sc. Univ. Ghent (Belgium) 1953; hon. mem. Free French War Veterans; Cross of Comdr., Grand Prix Humanitare de Belgique 1952; Cross of Knight of the Order de Chevaliers de la Croix de Lorraine, Paris 1952; Hon. Companion of the Resistance of the Order des Chevaliers de la Croix de Lorraine et des Compagnons de la Resistance, Paris 1952; hon. mem. Legion Belge; Knight Comdr. (with Star) of the Order of the Gold Cross of the Mil. Chapter of Cyprus and Jerusalem, Rome 1952 (founded 1199 A. D.); hon. mem. Accademia di Filologia Classica, Rome, 1952. Author of a number of books on bridge constrn.; number of technical & scientific papers, 1911 to date; constbr. to Encyclopedia Britannica, Encyclopedia Americana, Colliers Encyclopedia; num. arts. in A. S. C. E. Trans. and other engrg. jours.; prof. writings translated into for. langs. Pres. Am. Assn. Engrs. 1925-26, hon. mem., chmn. Civic Com., N. Y. Chapt. 1926-27; Edtl. Com. 1926-27; founder and pres. Natl. Soc. Prof. Engrs. 1934-36; pres. Natl. Council State Bds. of Engrg. Exams., 1931-32, v.p. 1930-31, chmn. Com. of Exams. 1930-33; pres. N. Y. State Soc. Prof. Engrs. 1942-43, chmn. Bd. of Tr. 1943-45, 1948-49, life mem.; chmn. N. Y. State Bd. of Exams. for Prof. Engrs. 1933-35, 1941-43, 1945-47, vice chmn. 1952-53; chmn. Struct. Div., Am. Soc. C. E. 1931-33, chmn. Local Mem. Com. 1929-32, chmn. Pubn. Bd., Struct. Div. 1929-34, Pubns. Com., Struct. Div. 1930-32, Com. on Steel 1929-31, chmn. Prof. Relations Com., N. Y. Sect. 1934-41, v. chmn. 1950-51, chmn. 1951-52 Com. on Reg. of Engrs.; v. chmn. N. Y. State Bd. of Licensing for Prof. Engrs. and Land Surveyors 1931-33, mem. 1930-41; mem. Exec. Com., Engrs. Council for Prof. Devel. 1933-39, Com. on Prof. Recognition 1933-41; founder and pres., Am. Toll Br. Assn. 1932-34; pres. N. Y. Acad. of Sci. 1952-53, life fellow, mem. Council 1951-53; chmn. U. S. Council of Internat. Assn. of Br. & Struct. Engrs. 1950-51; chmn. N. Y. State, Nat. Com. for Trade Recovery 1933-34; pres. Pan Am. Public Works, Inc.; v.p. Tioga-Nichols Br. Co., Smithboro Br. Co.; dir. Independence Br. Co., Interboro Br. Co. Mem. Com. on Bridge Legislation, Am. Engrg. Council 1930-34; mem. Engrg. Inst. of Canada, Am. Ry. Engrg. Assn., A. S. T. M., Am. Concrete Inst., Am. Mil. Engrs., Mimic, Engrs. of N. Y., A. S. E. E., B. A. E., Am. Math. Soc., Acad. Polit. Sci., Corp. of Prof. Engrs. of Prov. of Que., Prof. Engrs. of Ont., Assn. of Prof. Engrs. of Prov. of B. C., Brooklyn Soc. of Engrs., Internat. Assn. of Navigation Congresses, N. Y. Good Rds. Assn., Municipal Art Soc., Nat. Organizing Com. of Freedom Internat., Soc. for the Preservation of Covered Bridges, Public Works Com. of N. Y. Soc. of Archts.; life fellow, Royal Soc. of Arts (England); fellow, Aerial League of Am., Am. Geog. Soc., A. A. A. S.; hon. mem. Société des Ingenieurs Professionals (France), Association pour le Developpement de l'Electromécahnique et de l'Electrométallurgie (France), Ohio Soc. Prof. Engrs., Tex. Soc. Prof. Engrs., Ky. Soc. Prof. Engrs., Hudson Co. Soc. Prof. Engrs., Ida. Soc. Prof. Engrs. (life), Union County Chapt. of N. J. Soc. Prof. Engrs., Erie Co. (N. Y.) Chapt. Prof. Engrs., Archts. & Engrs. Alliance, Reg. Prof. Engrs. of N. Y., Ohio, Nebr., Mo., Ill., Conn., Ore., W. Va., B. C., Que., and Ont. Clubs: Brooklyn Engrs. (pres. 1931-33, v.p. 1930-31, chmn. Meetings & Papers Com. 1929-31), N. Y. Chapt. Phi Beta Kappa (pres. 1933-34), Columbia Univ.; Phi Beta Kappa Associates (life mem.), "Ends of the Earth," Engrs. (New York), Millions Club of Sydney, Australia (hon. mem.), Nat. Travel Club; Chi Epsilon (nat. hon. mem., 1950), Columbia Univ. Chapt. of Sigma Xi (elected 1951), Tau Beta Pi (hon. mem.), Sigma Alpha (hon. mem.), Mem. Nat. Council, Nat. Econ. League 1933-40; Nat. Pub. Housing Conf. Exec. Com.; Pres. Men's Group, N. Y. Soc. for Ethical Culture 1925-27; pres., chmn. Bd. of Tr., Madison House Settlement 1926-27; mem. Assoc. Alumni, C. C. N. Y. (v.p. 1930-31, 1949-50, Gen. Com. 36, 1947-49); hon. mem. Tech. Alumni, C. C. N. Y.; mem. Engrs. Council of the City Coll. Alumni (founder & dir.); mem. Cooper Union Alumni Assn.; mem. Nat. Com. for Columbia Univ. School of Engrg.; mem. Columbia Associates, Columbia Univ.; hon. mem. Internat. Faculty, Univ. of Andhra (India); fellow, Research Council, Emerson Univ.; mem. Colegio de Ingenieros de P. R.; hon. v.p. and mem. Advis. Com. Laymen's Nat. Comm. Mtg., Corps of Engrs., N. Y. State Guard; hon. mem., Internat. Inst. Am. Ideals; hon. mem. French Folklore Soc.; life mem., Soc. des Amis d'André-Marie Ampère (Fr.); charter mem., The Patrons of Rensselaer; mem. N. Y. State Assoc. Architects.

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S8

American Engineer

DECEMBER 1954
Volume Twenty-four, Number Twelve

Dr. D. B. Steinman, P.E., NSPE's founder and first president, is, as well as an outstanding engineer, a poet and writer of ability, and there are two documents on this page to prove it. The poem which appears is by the Doctor and below we print excerpts from a speech he gave before the Michigan College of Mining and Technology. You will enjoy both.

CHRISTMAS SYMPHONY

By D. B. STEINMAN, P.E.

On Christmas eve I crossed a bridge
That links two lands in amity.
No barrier stands across the span;
Instead my heart rejoiced to see
A portal arch of balsam boughs
To spell once more, in soft blue light,
The ageless words of peace and hope
That shepherds heard one starry night.

After I heard the church bells ring
And saw the twinkling lights aglow;
A peaceful gladness filled the air
As on that night of long ago;
And now, to join the symphony,
The span and towers, soaring high,
Are like a star-strung treme of song,
A gleaming harp against the sky.

Both dreams of men invoke the stars:
The bridge of faith, the prayerful spire,
Both give their anthems to the world,
To ring out with the heavenly choir;
And as their music thrills my soul,
I hear the angel-song again,
The blessed tidings of great joy:
"Peace on earth, good will to men."

. . . The world needs the college-trained minds of men and women in planning and building for the future!

It is the college-trained mind that is equipped for leadership in these days of vexing economic and social problems.

We are living in a rapidly changing world.

More vividly, intensely, and universally than any prior age, our generation has found itself living in a world of rapid and continual change, with the changes coming at increasing urgency and tempo.

An important necessity of life in a changing world is *leadership*. Humanity is troubled, confused, perplexed. We are beset by strange ideologies, class hatreds, political demagogues, pressure groups, official corruption, economic illiteracy, and crooked thinking. Leaders are needed —practical men and women of vision, trained to think straight, to plan, to organize, to direct, to unify, to inspire. Professional men and women, by personality, character, education and lifework, are natural *leaders*. Their straight thinking, their organizing ability, and their leadership are needed—in their professions, in their communities, and in national life. The world has a right to look to professional men for leadership.

In order that college-trained men and women may take their proper place as leaders of their fellowmen, it is important that their educational equipment be broader than the strictly prescribed limits of technology.

The late Dr. Gano Dunn, distinguished engineer and educator, eloquently expressed the need for a broader education for the professional man—in these words:

> "If his training neglects the great human mirrors of history and languages; if his heart and mind are insensible to the great social forces; if he but feebly develops the subtle qualities of character that make for personality, his career is limited, no matter how much science he knows."

Professional education, in building for the world of tomorrow, will have to be geared to this requirement of equipping men and women for vision and leadership.

Finally, in a world of flux and confusion, when men are swayed by selfishness and fears, when the finer human instincts are derided and disparaged, and when we see all around us the decay of moral and ethical standards, there is a crying need for men with *ideals*."

A professional career is inherently founded on certain ideals—the ideals of vision, character, honesty, and service to humanity. Professional men and women, by their education and their lifework, are selectively qualified to uphold and exemplify such ideals in their life, in their work, and in their relations with their fellow men.

An important element in life is loyalty. Our lives are shaped by our loyalties—to our family, our friends, our school, our church, our profession, our community, our country—but one loyalty I would place high on the list is *loyalty to our youthful ideals*. Only by loyalty to our ideals can we keep our lives straight. And only by holding to our goal of inspiration can we scale the heights.

In conclusion, there is one thought I want to leave with you. It is summarized in a single word—*consecration*. By that I mean all that goes into the feeling that our works live after us—that we are building not for ourselves but for posterity.

The great master builders who preceded us dreamed their dreams and wrought their dreams—giving health, strength, and even life itself—as the price of achievement. Profiting by our heritage from the pioneers, we are tackling even greater tasks. Whatever we may accomplish will in turn be eclipsed by those who follow after us.

In whatever we do—in whatever we build—beyond the stone and the steel, the calculations and the plans—the one priceless ingredient is the spirit of consecration. That includes the qualities of vision, devotion, inspiration, and integrity.

The whole thought is beautifully expressed in the words of John Ruskin:

> "Therefore when we build, let us think that we build forever. Let it not be our present delight, nor for present use alone. Let it be such work as our descendants will thank us for, and let us think, as we lay stone upon stone, that a time is to come when those stones will be held sacred because our hands have touched them, and that men will say, as they look upon the labor and wrought substance of them, 'See, this our fathers did for us.' "

X-TG 140

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X-TG140.S8 #161

French Engineers Honor Steinman



The above medal, especially designed and minted to honor Dr. David B. Steinman, was presented to him during a recent European visit by the Professional Engineers of France. The face of the medal shows the likeness of Dr. Steinman; the reverse side shows a perspective of his design for the Messina Straits Bridge which will be the longest span in the world.

Reprinted from AMERICAN ENGINEER

November, 1954, issue

Washington, D. C.



Rapports présentés au Congrès International des Ingénieurs Professionnels

(Paris, les 13, 14 et 15 Novembre 1953)

Activités des Ingénieurs Professionnels aux États-Unis d'Amérique

par le D David B STEINMAN

Ingénieur-Conseil, Président de l'Académie des Sciences de New-York,
Président général de l'Union Internationale des Ingénieurs Professionnels,
Fondateur et Premier Président de la Société Nationale des Ingénieurs Professionnels (U.S.A.)

Aux Etats-Unis d'Amérique les Ingénieurs Professionnels occupent, dans l'opinion publique, une position estimable et de tout premier rang.

Des lois d'immatriculation pour les Ingénieurs Professionnels sont maintenant entrées en vigueur dans tous les 48 Etats, y compris le district de Columbia et sur tout le territoire des Etats-Unis. Grâce à ces lois sur l'immatriculation, la législation et l'opinion publique ont admis que le métier d'ingénieur est une profession, une profession savante et que le métier d'ingénieur est une profession *bien définie.*

Les conditions standard requises pour l'immatriculation comprennent : une bonne moralité, l'instruction et l'expérience professionnelles, la réussite aux examens écrits.

Il y a maintenant plus de 190.000 Ingénieurs Professionnels immatriculés aux Etats-Unis. En outre, il y a plus de 40.000 ingénieurs diplômés, mais accomplissant des stages de perfectionnement. Il s'agit de personnes possédant leur diplôme, ayant passé avec succès les examens préliminaires pour l'immatriculation, mais qui attendent d'avoir terminé leur stage de quatre années de perfectionnement avant d'être admises à l'examen final qui leur conférera le titre d'Ingénieur Professionnel.

Dans chaque Etat, l'immatriculation des Ingénieurs Professionnels et des ingénieurs stagiaires est supervisée par un Comité d'Etat d'immatriculation pour examinateurs professionnels, ou par un Comité d'Etat d'ingénieurs examinateurs. Le travail de ces 52 Comités d'Etat est unifié et coordonné par un Conseil National des Comités d'Etat d'ingénieurs examinateurs.

En 1934, après avoir posé les bases solides de notre Association dans l'Etat de New-York, nous avons envisagé autre chose. Nous avons rêvé d'une organisation nationale pour tous les Ingénieurs, créée par tous les ingénieurs, consacrée à une grande cause, c'est-à-dire à une profession d'ingénieur définie, intégrée et unifiée.

J'eus le privilège de lancer l'appel pour la première réunion d'organisation et d'être le Premier Président de la Société Nationale des Ingénieurs Professionnels qui venait de naître. Je me suis consacré à cette tâche de tout mon cœur, de toute ma force, de tout mon temps libre. Au cours des années suivantes, j'ai parcouru des milliers et des milliers de kilomètres à travers tout le pays, du Maine au Texas, à mes propres frais et pendant mes heures de liberté, prenant la parole devant des réunions d'ingénieurs, de corps législatifs, au cours de réunions publiques et de congrès, prêchant le vote de lois sur l'immatriculation, organisant des nouvelles sociétés dans les différents Etats et prêchant l'évangile de l'immatriculation des ingénieurs, de la conscience professionnelle et du service public.

La semence que nous avons répandue a pris racine, a poussé et donné des fruits. Nous possédons maintenant une Société Nationale groupant 30.000 membres, avec 39 sociétés d'Etats membres, 300 Sections locales et 3.000 Comités d'ingénieurs. Tous ces organismes œuvrent pour l'avancement de la profession d'ingénieur et pour les idéaux les plus élevés de service à l'égard du public.

Et maintenant nous possédons une loi puissante et efficace sur l'immatriculation en ce qui concerne les ingénieurs, loi votée et en vigueur dans tous les Etats d'Amérique. Nous avons introduit dans ces lois sur l'immatriculation des exigences de haute compétence, y compris des exigences rigoureuses quant à la moralité, à l'instruction universitaire et professionnelle, à la formation et à l'expérience, aux examens écrits et au comportement de la profession. Tout cela parce que, en tant que membres d'une profession en qui l'on a confiance et qui est distinguée entre toutes, nous avons conscience de nos grandes obligations vis-à-vis du public.

Nous possédons également aux Etats-Unis nos Sociétés Nationales Techniques — plus de 90 — pour les différentes branches et spécialités de la profession. Nous avons des Sociétés d'Ingénieurs Civils, d'Ingénieurs Chimistes, d'Ingénieurs Radio, d'Ingénieurs Aéronautiques, d'Ingénieurs en Technique sanitaire, d'Ingénieurs Electriciens, d'Ingénieurs des Mines, d'Ingénieurs de l'Automobile, d'Ingénieurs Agricoles, d'Ingénieurs de l'Aéronautique, et d'autres en grand nombre, chacune consacrée à sa propre branche ou spécialité de pratique et de savoir.

Mais nous possédons UNE SEULE Société Nationale d'Ingénieurs Professionnels, unissant tous les ingénieurs pour le progrès de leurs intérêts communs dans l'estime et l'appréciation du public.

C'est la seule société existant aux Etats-Unis dont peuvent uniquement faire partie des Ingénieurs Professionnels immatriculés. C'est la seule société aux Etats-Unis qui groupe des ingénieurs appartenant à toutes les branches de la profession. C'est la seule société aux Etats-Unis consacrée exclusivement à des activités PROFESSIONNELLES, comme le veulent la législation, les rapports avec le public et les statuts de la profession.

Notre Société Nationale d'Ingénieurs Professionnels, nos Sociétés d'Etat et nos Sections locales sont étroitement intégrées. Le membre d'une unité est en même temps membre de toutes les autres. Chaque membre de la Société Nationale est automatiquement un membre de sa Société d'Etat et de sa Section locale.

Grâce à notre Etat sur l'immatriculation, à nos Sociétés d'Etat et à notre Société Nationale d'Ingénieurs Professionnels, nous avons fait du métier d'ingénieur une profession définie, intégrée et unifiée.

Nous établissons la reconnaissance du principe que personne n'est ingénieur s'il n'est immatriculé en vertu de la loi sur les ingénieurs.

Nous avons réalisé de grands progrès pour arrêter l'abus qui était fait de l'appellation d'ingénieur par des personnes non qualifiées, incompétentes et peu scrupuleuses.

Nous avons fait du titre d'« Ingénieur » une appellation honorée et respectée, définie et délimitée par la loi. Et nous avons fait de la profession d'ingénieur quelque chose d'honoré et de respecté; également défini et délimité par la loi.

Nos rêves se sont concrétisés. Nous avons obtenu que le public et la législation reconnaissent la vérité fondamentale que le métier d'ingénieur est une profession, une profession libérale et que cette profession est une consécration et une vocation.

De plus, nous avons rappelé que le métier d'ingénieur est basé sur des idéaux élevés — les idéaux d'imagination créatrice, de conscience professionnelle, d'intégrité et de service consacré à l'humanité.

X-TG 140

DAILY MIRROR WEDNESDAY APRIL 21 1954

THEIR SONG LIVES ON

(Poem of the Week)

The torch we kindle glows
beyond the night
And in the gleam afar we
live again.
With starlike rays of kindness,
love and light,
We build a heaven in the
hearts of men.

We hear ethereal music and
aspire
To dwell in beauty where
the soul is free;
On wings of love we join the
heavenly choir
Whose anthem rings through
all eternity.

They live again whose glow
made life sublime;
Their star still shines to lead
us toward the goal;
Their song lives on until the
end of time
To make immortal music for
the soul.

—D. B. Steinman

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THE ENGINEERING JOURNAL

THE JOURNAL OF THE ENGINEERING INSTITUTE OF CANADA

VOLUME 37 MONTREAL, NOVEMBER 1954 NUMBER 11

Dr. David B. Steinman, M.E.I.C., New York consulting engineer, has been recently honoured with the Legion of Honour by the Government of France, and with the gold medal by the Government of Italy. The citation accompanying the French award recorded Dr. Steinman's professional achievements and his contributions toward strengthening international relations. In the presentation of the Italian award to Dr. Steinman who has prepared plans to span the Strait of Messina to Sicily, he was referred to as the "greatest bridge designer". The Rev. Felix A. Morlion, rector of the International Catholic University for Social Studies, made the presentation in the name of a committee of representative Italians.

X-TG 140
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Bridges and Aerodynamics

By D. B. STEINMAN

(Presidential address at the Annual Dinner of the New York Academy of Sciences, December 3, 1953)



INTERMEDIATE STAYS for Checking Aerodynamic Oscillations—Installation on Deer Isle Bridge, Maine.

X-TG 140
S8

X-TG 140.S8 #140

NORWEGIAN AMERICAN TECHNICAL JOURNAL

Vol. 21, No. 2 November 1954



A CHRISTMAS SLEIGH-RIDE

By D. B. Steinman

When love was young and hearts were gay,
Who minded wintry weather?
All snugly bundled in the sleigh,
We sallied forth together.

When cheeks were flushed and lips were warm,
Who minded snow-flakes clinging,
Our joy rang out above the storm,
In tune with sleigh-bells ringing.

Through sunset glow and first star-bright,
What brought the tender yearning?
We glided home toward candle light
And warmth of Yule-logs burning.

X-TG 140
S8

X-TG-58 #67

Dr. David B. Steinman Says Progress Being Made at Straits

Real progress in every department of the construction of the Mackinac Straits Bridge already is to be noted, with workmen all over the country, as well as at Mackinac, at work on the things needed on the giant construction job.

And not only that, said Dr. David B. Steinman, designer of the bridge, speaking to the Kiwanis Club of Sault Ste. Marie Tuesday — "but there is definite progress in the advancement of the Sault International Bridge. Canadians all are favorable to the bridge, and I predict that this Sault bridge will be constructed and completed by the time the Mackinac bridge is.

Dr. Steinman said that within the coming fortnight Caisson Pier 18 will be sunk as one of the first steps in actual construction of the bridge.

The bridge authority's consulting engineer declared his pleasure at the Kiwanis motto, "We Build," and at a line in a Kiwanis song as led by Capt. Albert Koch . . . "May all our fond dreams come true."

"All of my life dream after dream has come true," Steinman declared. Little did he think, while he was selling papers under the Brooklyn Bridge when a boy, that he would be the designing engineer to the recently remodeled Brooklyn Bridge, with his name on a bronze tablet at the end of the bridge. But somehow, Providence, aiding him, he managed to school himself for bridge engineering, with his dreams turning into reality.

Dr. Steinman paid glowing tribute to the Mackinac Bridge Authority, and to George A. Osborn, who was present at the Kiwanis luncheon. "These inspired men will find the bridge a great monument to themselves at its completion in 1957. Our work lives long after us."

The bridge will be the finest ever built, the engineer insisted.

Dr. Claud Quist, program chairman, commented, following Dr. Steinman's talk, that "We in the Sault, and all of Michigan, owe much to you."

Reprinted from the May 26, 1954 issue of The Evening News, Sault Ste. Marie, Michigan.

X-TG 140
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JOURNAL
of the
AMERICAN CONCRETE INSTITUTE
October 1954

Steinman honored in Europe

During his recent European tour, Dr. D. B. Steinman, internationally-known bridge engineer of New York City, received several honors.

In Rome, he was presented with a gold medal and specially engrossed diploma of honor by the International University Pro Deo.

In Paris, Dr. Steinman was presented with the Medaille de la Reconnaissance Francaise (Medal of French Recognition); there are only five prior recipients of this award. He was also presented the Gold Medal and Diploma of Honor of the French Society of Inventors, and a special gold medal of "Recognition by the Engineers of France." This medal, especially designed and minted, bears Dr. Steinman's sculptured portrait on the face and on the reverse a sculptured perspective of his design for the Messina Straits Bridge. Bronze replicas of this medal will be minted for future annual awards.

While in France, Dr. Steinman was also presented with the medal and diploma of honor of the Société Nationale des Medailles Civils, the Croix de Commandeur de l'Education Civique, Palme de Commandeur de l'Encouragement Public, and Croix de Commandeur de l'Etoile du Bien et du Merite.

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LE PROBLÈME AÉRODYNAMIQUE DES PONTS SUSPENDUS ET SA SOLUTION

PAR

Dr. D. B. STEINMAN,

Ingénieur-Conseil,
New-York

Conférence faite le 27 juillet 1954 à Bruxelles,
sous les auspices du **Groupement Belge de l'Association Internationale des Ponts et Charpentes (A.I.P.C.)**
de la **Société Royale Belge des Ingénieurs et Industriels (S.R.B.I.I.)**
et de **Fabrimétal.**

Extrait des nos 10-11 - Octobre-Novembre 1954 de
L'OSSATURE MÉTALLIQUE
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154, avenue Louise
BRUXELLES

X-16 140 58 #69

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NEW YORK
PROFESSIONAL ENGINEER

Official Publication of
The New York State Society of Professional Engineers
Incorporated

SEPTEMBER-OCTOBER, 1954 Vol. 11, No. 4

Engineers of France Honor Dr. Steinman with Special Medal

At a dinner and reception in his honor on July 31, 1954, at Paris, D. B. Steinman, internationally eminent bridge engineer, was presented with a special gold medal of "Recognition by the Engineers of France" ("Reconnaissance des Ingenieurs Professionels Francais"). This medal, especially designed and minted in honor of Dr. Steinman, bears his sculptured portrait on the face and, on the reverse, a bas-relief perspective of his design for the Messina Straits Bridge to join Sicily to Italy with the world's longest span of 5,000 feet. The French mint will make bronze replicas of this medal for future annual awards.

The medal was designed for the French engineers by Professor Albert P. d'Andrea, head of the Art Department at the City College of New York. Following the presentation of the medal, Dr. Steinman delivered an address in French on "Building Bridges of Friendship Between the Nations."

X-TG 140

X-TG 140 #11

HÄNGEBRÜCKEN

Das aerodynamische Problem und seine Lösung

VON

Dr. D. B. STEINMAN

Beratender Ingenieur,
New York

Vortrag, gehalten am 27. Juli 1954 in Brüssel,
auf Veranlassung der Belgischen Gruppe der Internationalen Vereinigung für Brückenbau und Hochbau (I. V. B. H.),
der Société Royale Belge des Ingénieurs et Industriels (S. R. B. I. I.)
und Fabrimétal.

Auszug aus Nrn. 10-11 — Oktober-November 1954
der
INTERNATIONALEN ZEITSCHRIFT FÜR STAHLVERWENDUNG
ACIER – STAHL – STEEL

Herausgegeben von der
BELGISCH-LUXEMBURGISCHEN BERATUNGSSTELLE FÜR STAHLVERWENDUNG
(Centre belgo-luxembourgeois d'information de l'Acier)
154, avenue Louise, Brüssel

unter Mitwirkung der
BERATUNGSSTELLE FÜR STAHLVERWENDUNG, DÜSSELDORF,
UND DES DEUTSCHEN STAHLBAUVERBANDS, KÖLN

RIVISTA ROMANA

A SETTEMBRE IL PRIMO CONVEGNO NAZIONALE DI STUDI SULLA CONCILIAZIONE

MCMXXIX



MCMLIV

ANNO I - N. 2
APRILE 1954

Réalités

numéro 98 — Mars 1954

AIME-T-ON ENCORE LA FRANCE ?

A cette question que nous posions dans notre numéro de février, nous avons reçu, sous la forme originale et charmante d'un poème, la réponse d'un fervent admirateur de notre pays. Il s'agit du grand ingénieur des ponts américain, David Steinman, président de l'Académie des Sciences, qui a construit le pont Henri-Hudson et reconstruit le pont de Brooklyn.

■ New-York.

A LA FRANCE

Quel est donc ce charme magique, ô France,
De l'amour la chaleur, d'une chanson la cadence,
Cet attrait romanesque auquel battent nos cœurs,
Ce souffle printanier qui nous parle de bonheur?
La lumière du soleil, du vent la suave caresse,
Les étoiles qui apaisent nos heures de détresse.
Par ton art, ta beauté, de ta culture la fleur —
O France — à l'Univers tu as donné un cœur!

O France — quel est-il, cet appel enivrant
Auquel vibrent tes héros dans leurs nobles élans?
Tes fils dans leur ardeur l'étendard déployèrent,
Pour la Liberté ils luttèrent et leurs vies ils immo-
(lèrent,
Ils forgèrent pour les Hommes ton projet émouvant,
Pour la Fraternité de tous ils versèrent leur sang.
Ce rêve magnifique est maintenant notre flamme —
O France — à l'Univers tu as donné une âme!

D. B. Steinman,
117 Liberty St. New York, N. Y.

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FAMOUS BRIDGES OF THE WORLD

AN INTERESTING NEW BOOK BY Dr. D. B. STEINMAN.

(Famous Bridges of the World. By Dr. D. B. Steinman. 100 pages. Illustrated with photographs and sketches. Published by Random House Inc., New York.)

Dr. David B. Steinman is one of the world's leading bridge builders and has many fine structures throughout the United States and elsewhere to his credit. He is a man who loves his work and is never happier than when he is lecturing or writing about it. This book, which is primarily designed for the adolescent, is appropriately dedicated to his five grand-children. The pen and ink sketches by Kurt Wiese illustrate simply the various points as they are met in the text.

The first bridges were very simple, being natural arches of stone, trees fallen across a ravine, or a heavy vine spanning a river.

Roman Bridges.

The Romans were perhaps the first great bridge builders, and a number of their remarkable stonework are still extant to command our admiration such as the famous Pont du Garde aqueduct at Nimes.

A beautiful example of a stone arch bridge is at Alcantara in Spain, across the Tagus river which, although restored from time to time, still looks much as it did in 90 A.D. when it was built to the order of the Emperor Traian.

The engineering feats of the Romans appear even more remarkable when we recall that all the work was done by hand, slaves furnishing the whole of the labour and nobody caring how long it took to erect a structure. Although tools were of the crudest, the Romans made the stone arch a thing of beauty.

Old London Bridge.

After the fall of the Roman Empire very few bridges were built for four or five centuries, but later the monks took over and the two most famous bridges of the Middle Ages were erected by them; the first was the St. Benezet Bridge over the Rhone at Avignon, and the second Old London Bridge, which stood for over six centuries and was the only bridge across the Thames in London. It had nineteen stone arches, varying in length from 15ft. to 34ft. with a total length of 936 ft. The seventh span on the Southwark side was a drawbridge like the bridge over a mediaeval moat. When completed the only buildings on the bridge were the fortified gatehouses at each end and the chapel in the middle, but strange as it may seem to present-day eyes, houses were gradually built on it until there were 100 in all and at the time of Queen Elizabeth I. London Bridge was a most fashionable address.

The Rialto, Venice.

Another remarkable bridge was the Rialto, of Shakespearen fame, which erected in 1587, crossed the Grand Canal in Venice in a single arch 89 feet wide. It had most difficult foundations owing to the soft and marshy character of the soil, this problem being overcome by its designer, Antonio da Ponte (who was most aptly named, Ponte meaning bridge) who drove piles deep into the bed of the Canal, so that they were leaning against the current and then built his masonry blocks upon the timber platform on top of the piles.

A Frenchman, Jean Rodolphe Perronet, made revolutionary advances in stone arch bridge construction and at the age of 78 built the famous Pont de la Concorde.

In Britain, John Rennie, a Scottish engineer, was also building many famous bridges, his last structure being New London Bridge which was finished in 1831 by his son, Sir John Rennie. It has a total length of 1005 ft., weighs 130,000 tons and though in appearance it is massive its stone arches curving out over the water form a very beautiful design.

Early Iron Bridges.

The first iron bridge was the Coalbrookdale bridge over the Severn river in England, and it was made of separate wedge-shaped pieces to form the arch ring. Built in 1779 with a span of 100 ft. it is still standing and carrying traffic. A great advancement in bridge building was brought about by James Buchanan Eads, who constructed a great bridge over the Mississippi at St. Louis and completed it in 1874. Foundations to support the bridge were over 100 ft. below the surface and to construct these he used pneumatic caissons for the first time in America. The deadly caisson disease was encountered and claimed twelve victims before its implications were understood.



THE FAMOUS BROOKLYN BRIDGE, NEW YORK.

Having dealt with these early bridges and the advent of the modern steel structure he simply describes the various types of bridge design such as lattice girder, lattice truss, and bridges that combine in their design the arch, truss and beam. Then he comes to the type of bridge that perhaps captures the imagination more than any other and which has been so dramatically developed in the United States during the present century—the suspension bridge.

Great Strength of Steel Wire.

He explains that steel wire, the basis of the suspension bridge, is the safest, strongest and most convenient form

X-15 140



He Conquered Barriers

JOHN A. ROEBLING

Born in Germany, June 12, 1806

ROEBLING'S PLANS for a suspension bridge to carry railway trains over the Niagara gorge evoked a storm of protest. The collapse, in a gale, of the Wheeling suspension bridge across the Ohio made most engineers doubt the validity of all such construction. Roebling's solution was two-fold: stiffened construction to prevent the build-up of vibrations and the use of specially-constructed cables of uniform tension and great strength. Completed in 1855, the Niagara span stood the test of time and provided a vital roadway to link the people of the United States and Canada. With it "the suspension form came into its own and became the dominant type for the longest and greatest spans in the world," says Dr. D. B. Steinman, who recently supervised modernization of Roebling's later masterwork, the famous Brooklyn Bridge. Brooklyn's only contact with Manhattan, in 1870, was by ferryboat. Roebling was commissioned to build a bridge of unprecedented length across the East River. Thanks to his courage in using steel rather than iron for his cables (a bitterly-fought-for innovation), steel became the foremost structural metal. He lost his life in an accident during construction, but the bridge was completed in 1883, uniting two great communities. Roebling taught engineers to bridge greater expanses of water than had been dreamed possible before, thus promoting communication among peoples once separated by formidable barriers.

X-TG 140

LE SOIR

SALLE DE DEPECHES : RUE ROYALE, 124 — BRUXELLES

SAMEDI 31 JUILLET 1954

La construction des ponts

La technique des grands ouvrages d'art ne cesse de faire des progrès dans tous les domaines. La science de l'ingénieur résout chaque jour de nouveaux problèmes et surmonte des obstacles qui semblèrent hier encore infranchissables. Récemment, ici même, nous avons parlé de la construction des grands barrages. Voici qu'à l'invitation du Groupement belge de l'Association internationale des Ponts et Charpentes, de la Société royale belge des ingénieurs et industriels et de Fabrimétal, un éminent ingénieur américain, le Dr D. B. Steinman, président de l'Académie des Sciences de New-York, vient d'exposer, en une brillante conférence les « Nouveaux développements dans la construction des ponts ». Spécialiste de la question, la compétence du Dr Steinman fait autorité dans le monde entier, et ses réalisations remarquables dans de multiples pays comptent parmi les plus audacieuses et les plus belles. Les nombreuses projections en couleurs dont il a illustré son expose ont, en effet, montré que les préoccupations techniques de solidité, de tracé et d'équilibre s'accordent dans ses conceptions avec le caractère esthétique et le souci de les harmoniser, par la ligne et même par la couleur, avec le paysage dans lequel le pont est érigé. De cet accord parfait résulte une beauté qui autorise vraiment a parler d'ouvrages d'art.

Mais si un pont doit être net comme une épure, il doit aussi être solide, et c'est ici que commence la difficulté. Le Dr Steinman s'est étendu sur le probleme de l'instabilité aérodynamique des ponts suspendus. Les pressions enormes que le vent fait subir a ces constructions, dont les tabliers semblent flotter au bout de leurs chaines ou de leurs câbles d'acier, doivent être compensées par la résistance de l'ensemble. Sinon il arrive des catastrophes comme celle du pont de Tacoma, qui fut détruit en 1944, six mois a peine après son achèvement, à la suite d'une tempête. Pour les ponts qu'il a à construire, le Dr Steiman a mis au point une théorie des phénomenes d'oscillations, qui a été expérimentée en tunnel aérodynamique. Il étudie en ce moment le projet d'un pont suspendu qui est projeté entre l'Italie et la Sicile, à travers le détroit de Messines : la travée principale aura une portée de 1.525 mètres, sans aucun appui intermédiaire et sera de ce fait la plus longue du monde.

L'exposé substantiel et clair a été suivi avec grand interêt par un public qui comptait de nombreux ingenieurs belges spécialistes de la construction des ponts et charpentes.

H. L.

American Engineer

DECEMBER 1954

Volume Twenty-four, Number Twelve

Dr. D. B. Steinman, P.E., NSPE's founder and first president, is, as well as an outstanding engineer, a poet and writer of ability, and there are two documents on this page to prove it. The poem which appears is by the Doctor and below we print excerpts from a speech he gave before the Michigan College of Mining and Technology. You will enjoy both.

CHRISTMAS SYMPHONY

By D. B. STEINMAN, P.E.

On Christmas eve I crossed a bridge
That links two lands in amity.
No barrier stands across the span;
Instead my heart rejoiced to see
A portal arch of balsam boughs
To spell once more, in soft blue light,
The ageless words of peace and hope
That shepherds heard one starry night.

After I heard the church bells ring
And saw the twinkling lights eglow;
A peaceful gladness filled the air
As on that night of long ago;
And now, to join the symphony,
The span and towers, soaring high,
Are like a ster-strung frame of song,
A gleaming harp against the sky.

Both dreams of man invoke the ster:
The bridge of faith, the prayerful spire,
Both give their anthems to the world,
To ring out with the heavenly choir;
And as their music thrills my soul,
I hear the angel-song again,
The blessed tidings of great joy:
"Peace on earth, good will to men."

. . . The world needs the college-trained minds of men and women in planning and building for the future!

It is the college-trained mind that is equipped for leadership in these days of vexing economic and social problems.

We are living in a rapidly changing world.

More vividly, intensely, and universally than any prior age, our generation has found itself living in a world of rapid and continual change, with the changes coming at increasing urgency and tempo.

An important necessity of life in a changing world is *leadership*. Humanity is troubled, confused, perplexed. We are beset by strange ideologies, class hatreds, political demagogues, pressure groups, official corruption, economic illiteracy, and crooked thinking. Leaders are needed —practical men and women of vision, trained to think straight, to plan, to organize, to direct, to unify, to inspire. Professional men and women, by personality, character, education and lifework, are natural *leaders*. Their straight thinking, their organizing ability, and their leadership are needed—in their professions, in their communities, and in national life. The world has a right to look to professional men for leadership.

In order that college-trained men and women may take their proper place as leaders of their fellowmen, it is important that their educational equipment be broader than the strictly prescribed limits of technology.

The late Dr. Gano Dunn, distinguished engineer and educator, eloquently expressed the need for a broader education for the professional man—in these words:

> "If his training neglects the great human mirrors of history and languages; if his heart and mind are insensible to the great social forces; if he but feebly develops the subtle qualities of character that make for personality, his career is limited, no matter how much science he knows."

Professional education, in building for the world of tomorrow, will have to be geared to this requirement of equipping men and women for vision and leadership.

Finally, in a world of flux and confusion, when men are swayed by selfishness and fears, when the finer human instincts are derided and disparaged, and when we see all around us the decay of moral and ethical standards, there is a crying need for men with *ideals*.

A professional career is inherently founded on certain ideals—the ideals of vision, character, honesty, and service to humanity. Professional men and women, by their education and their lifework, are selectively qualified to uphold and exemplify such ideals in their life, in their work, and in their relations with their fellow men.

An important element in life is loyalty. Our lives are shaped by our loyalties—to our family, our friends, our school, our church, our profession, our community, our country—but one loyalty I would place high on the list is *loyalty to our youthful ideals*. Only by loyalty to our ideals can we keep our lives straight. And only by holding to our goal of inspiration can we scale the heights.

In conclusion, there is one thought I want to leave with you. It is summarized in a single word—*consecration*. By that I mean all that goes into the feeling that our works live after us—that we are building not for ourselves but for posterity.

The great master builders who preceded us dreamed their dreams and wrought their dreams—giving health, strength, and even life itself—as the price of achievement. Profiting by our heritage from the pioneers, we are tackling even greater tasks. Whatever we may accomplish will in turn be eclipsed by those who follow after us.

In whatever we do—in whatever we build—beyond the stone and the steel, the calculations and the plans—the one priceless ingredient is the spirit of consecration. That includes the qualities of vision, devotion, inspiration, and integrity.

The whole thought is beautifully expressed in the words of John Ruskin:

"Therefore when we build, let us think that we build forever. Let it not be our present delight, nor for present use alone. Let it be such work as our descendants will thank us for, and let us think, as we lay stone upon stone, that a time is to come when those stones will be held sacred because our hands have touched them, and that men will say, as they look upon the labor and wrought substance of them, 'See, this our fathers did for us.' "

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French Engineers Honor Steinman



The above medal, especially designed and minted to honor Dr. David B. Steinman, was presented to him during a recent European visit by the Professional Engineers of France. The face of the medal shows the likeness of Dr. Steinman; the reverse side shows a perspective of his design for the Messina Straits Bridge which will be the longest span in the world.

Reprinted from AMERICAN ENGINEER

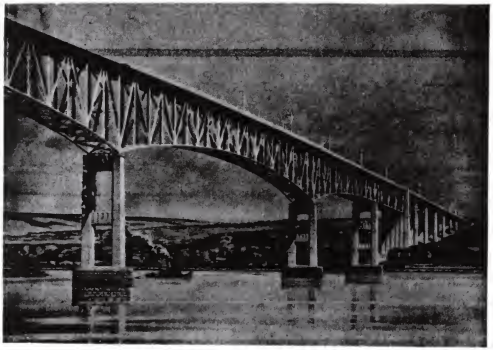
November, 1954, *issue*

Washington, D. C.

X-

Contractors and Engineers
magazine of modern construction

JULY 1954



A sketch of the proposed 7,793-foot-long bridge across the Hudson River, New York, designed by D. B. Steinman. Merritt-Chapman & Scott Corp., New York, N. Y., holds the substructure contract for the $4 million span, which is located just north of Kingston, N. Y.

Italian University Confers Degree on D. B. Steinman

The honorary degree of Doctor of Civil Engineering was conferred June 30 on David B. Steinman, of New York, N. Y., bridge engineer, by the University of Bologna, in Italy. During the ceremonies, Dr. Steinman presented a paper on "Suspension Bridges — The Aerodynamic Problem and Its Solution".

Financing and construction of a specific suspension bridge are the reasons for Dr. Steinman's current visit to Italy. He is discussing plans with authorities there for the building of the proposed Messina Straits Bridge, connecting Italy and Sicily. The bridge would have the longest main span in the world—5,000 feet.

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This Gladness I Have Known

By D. B. Steinman

I have seen a bluebird on the wing,
  Above a field in gold and scarlet hue;
A spray of apple blossoms in the spring
  In dazzling light against a sky of blue.

I have known the joy of golden days,
  A grassy bank, a stream in jeweled glow;
Then oak and maple leaves in autumn blaze,
  And pines in winter, crowned with sunlit snow.

  God, I thank Thee for the gift of light
  And weep for those who dwell in endless night.

Reprinted from
The Hartford Courant
July 31, 1954

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NOVA SCOTIA TECHNICAL COLLEGE
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SUSPENSION BRIDGES: The Aerodynamic Problem and its Solution[1]

Technical Literature 619.

by D. B. Steinman
Consulting Engineer, New York, New York

Part I

This is the story of a baffling scientific problem with which the engineering profession was dramatically confronted in 1940, and of the ensuing intensive application of the resources of science and invention for the urgent solution of the problem.

On July 1, 1940, the Tacoma Narrows Bridge at Puget Sound was completed and opened to traffic. Built at a cost of $6,400,000, with a main span of 2800 feet, it was the third longest span in the world. On November 7, 1940, four months and six days after the official opening, the oscillations of the bridge in a mild gale increased to destructive amplitude until the main span broke up, ripping loose from the cables and crashing into the water 208 feet below.

The engineering fraternity was startled by the catastrophe. The phenomenon was not new, but had been unrecorded or forgotten by the profession. A century earlier, bridge after bridge had been similarly wrecked by wind action, notably the Brighton Chain Pier in England in 1836, the Wheeling Bridge over the Ohio River in 1854, the Lewiston-Queenston Bridge over Niagara River in 1864, and the Niagara Clifton Bridge at Niagara Falls in 1889. John A. Roebling (1806-1869) taught the profession the importance of adequate stiffening of suspension bridges; his bridges stood up while those built by his contemporaries were wrecked by the wind. But a later generation of engineers, forgetting the lesson of the past, began to preach the virtues of flexibility without recalling its hazards. This reversal of trend reached its climax in the ill-fated Tacoma span.

In fact, some twenty known bridges completed since 1930 have been subject to disturbing or dangerous aerodynamic oscillations, and some of them have required the application of corrective measures to make them safe. In 1945, a contract of over $1,300,000 was let for additional stiffening and correction of the 2300-foot span Bronx-Whitestone Bridge. The Golden Gate Bridge, with the world:s longest span of 4200 feet, has suffered dangerous aerodynamic oscillations and in 1953 a contract for over $3,000,000 was let for stiffening the structure against aerodynamic action.

The decade ending in 1940 witnessed more rapid progress in bridge-building, as measured by lengthening spans, boldness of proportions, and increasing magnitude of projects, than all the centuries preceding. The five longest spans in the world were all completed during this decade, and the record span length was more than doubled, from 1850 feet to 4200 feet. The startling problem to which the profession was awakened in 1940 threatened to halt further progress in the development of long, span bridges.

Recognizing that a complete, scientific solution of this challenging problem was desperately needed, I dedicated myself to the task, and I discovered the aerodynamic action in 1938. These intensive studies were undertaken by me two years before the Tacoma Bridge failure. Fifteen years of my professional

[1]Copyright 1954 by American Scientist. Reprinted from July 1954 issue by permission.

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THE DAILY BOND BUYER

Financing of Bridge Between Two Sault Ste. Maries Planned

Sault Ste. Marie, Mich.—Acceptance of a proposal by a group of investment bankers to manage the financing of the International Bridge between Sault Ste. Marie, Ontario, and Sault Ste. Marie, Mich., is announced by Paul P. Hoholik, Chairman of the State of Michigan International Bridge Authority.

"We have completed arrangements for a strong, versatile bond management group to market the International Bridge bonds. Union Securities Corporation, B. J. Van Ingen & Company, Allen & Company of New York along with A. C. Allyn & Company, Stifel, Nicolaus & Company of Chicago, and Kenower & MacArthur of Detroit comprise a combination of financiers who can guarantee the successful underwriting of the project," said Hoholik.

Last year the Authority selected D. B. Steinman, internationally famous bridge consultant to advise on engineering. It is the Authority's intention to retain Coverdale & Colpitts on traffic analysis.

"We are leaning heavily on the winning combination that made the Mackinac Bridge financing a success. Now we are ready to go ahead except for enabling Canadian legislation which we hope will still be given consideration in Ottawa this session. If it passes, we can get under way next Spring. Bond market conditions are good now. And possible contractors are figuratively just around the corner working on the Straits Bridge," Hoholik added.

An International Bridge connecting United States and Canada at Sault Ste. Marie has long been a dream of the people on both sides of the border who have been forced to commute via a "horse and buggy" ferry service.

The Mackinac Bridge and the International Bridge would be 50 miles apart, and would supplement each other on the route from highly industrialized lower Michigan to the Ontario mining region.

May 20, 1954

X-TG 140

AN ANGEL CAME TO DWELL WITH ME.

An angel came to dwell with me.
A woman, humanly divine;
My life became a melody,
My love a hymn, my heart a shrine.

When I was sad with care and strain,
My solace was her tenderness;
For every sorrow, every pain.
Her love was there, to heal and bless.

When years of thankless toil slipped past,
I found my guerdon in her eyes;
And when life's laurels came at last,
Her tears of gladness were my prize.

In sunset glow, as shadows fall,
I watch the light of day depart.
O evening star, I hear your call
To join the one who holds my heart.

—By Dr. D. B. Steinman, famous Bridge Engineer and also a poet, published in "Boston Post."

How happy the world would be if we could but express sentiments such as these.

X- 6S8.4

X-T6 10.S.#34

Poems for Your Scrapbook

These Glories Are Revealed

By D. B. STEINMAN

The sun sinks in the west with robes of flame
Before the stars blaze forth when day is done;
In gold and scarlet hues the skies proclaim
The deathless glory of the dying sun.

Transformed to fiery splendor in the fall,
The forest leaves are ready to take wing;
The trees in autumn blaze await the call
To winter sleep and then rebirth in spring.

The storm-tossed mariner sees a glow on high
As dark clouds part and heaven's rays descend;
A hymn of light, a rainbow spans the sky
To herald peace and love at journey's end.

These glories are revealed so we may see
How beautiful the last of life can be.

(Reprinted from The Boston Post of June 2, 1954)

X-TG 14



M-C&S Gets Contract For New Bridge

Award to Merritt-Chapman & Scott of a $4.5 million low bid contract for construction of the substructure of a new bridge to be erected across the Hudson River was made known by New York State Bridge Authority Chairman, Robert Hoe.

To be known as the Kingston-Rhinecliff, the bridge will be located three and a half miles north of Kingston. D. B. Steinman, New York, designed the span which will measure 7,793 feet from abutment to abutment, with a 36 foot roadway flanked by two foot walks. New highways will link the bridge with New York State Route 9-G on the east and New York State Route 9-W on the west.

SUBSTRUCTURE work by M-C & S will involve construction of the bridge's 30 twin shafted piers of reinforced concrete, eight in the river and 22 ashore, and two abutments. The granite-faced concrete block bases of the river piers will rest on steel H-piles driven to bed rock. The piers will range up to 195 feet in height.

So that motorists will have an unobstructed view of the Hudson Valley, the superstructure was designed as a deck truss span, with all supporting steelwork below the roadway. There will be three foot railings along the walkways.

The spans over the east and west channels will be 800 feet long, providing 760 feet of horizontal clearance and a minimum vertical clearance of 135 feet above high water.

Reprinted from June 14, 1954 issue New York Construction News

X-TG 140

Bridge Construction, History Described in Steinman Book

FAMOUS BRIDGES OF THE WORLD, by Dr. David B. Steinman, illustrated by Kurt Wiese, 96 p.p. including photographs. Random House. $1.75.

Bridge-building, which figures prominently in the eastern Upper Peninsula news because of the Straits of Mackinac Bridge and the prospective connecting link between the two Sault Ste. Maries, is one of man's oldest known engineering accomplishments.

The history of bridges and the principal types of designs used in their construction is the subject of this non-technical book by Dr. David B. Steinman, designer of the Mackinac span, and whose firm is designing a connecting link between the two Sault Ste. Maries.

As the book jacket points out, Dr. Steinman was a teacher for 10 years before entering private practice in 1920. That he was a teacher and understands the difficulty in presentation of a technical subject to the general public is apparent in the easy style in which the book is written.

In the preface, he writes the following:

"This book is written for younger readers with the thought of imparting to them some of the spell and fascination of bridge building and to answer their questions of 'How?' and 'Why?'

"To become a builder of bridges was my boyhood dream, and my dream has come true. Perhaps this book will help to kindle the interest and ambition of others."

Dr. Steinman goes back to the earliest history of bridges, and how man must have learned their uses in pre-historical times.

He then discusses the various types of construction, such as the beam bridge on piers, the stone arch, the truss bridge, and combinations of the three, and suspension, cantilever, and movable bridges.

Dr. Steinman points out that many of the world's famed bridges were constructed only after special problems were overcome, the skepticism of pessimists refuted, and through personal sacrifice of the designers and workmen.

He tells in some detail of the construction of the Eads Bridge over the Mississippi River at St. Louis. "The Eads Bridge is a monument to the originality, courage, and genius of this great American—a pioneer master builder. To it he gave everything he had; people said his dream was crazy; engineers declared the project too dangerous and bold. But the bridge, completed in 1874, still stands. It carried heavy railroad and highway traffic, after more than two generations of service."

The double-leaf bascule bridge at the Sault Locks is cited as a record of its type of construction, and Dr. Steinman also tells of the five-mile-long Straits of Mackinac Bridge, with a suspension span of 3,800 feet, the second largest in the world.

The book also contains photographs of 23 famous bridges of the world, including three of Dr. Steinman's bridges, the Florinaapolis in Brazil, the St. John's at Portland, Ore., and the Carquinez Strait in California. It also shows the famous Brooklyn Bridge, reconstructed by Dr. Steinman's firm in 1950-1953.

The book, interesting in its own right, is valuable to anyone interested in bridges in general, and in the coming great bridge projects in this area in particular.—J.M.M.

Reprinted from the May 30, 1954 issue of The Evening News, Sault Ste. Marie, Michigan.

NEW YORK
PROFESSIONAL ENGINEER

NOVEMBER-DECEMBER, 1954 Vol. 11, No. 5

Presentation of Steinman Medal to Steinman at Paris



At reception and dinner in his honor at Paris on July 29, Dr. Steinman receives the "David B. Steinman Medal of Recognition of the Professional Engineers of France." E. M. Guiton, President of the Professional Engineers of France. presents the medal, with Mrs. Steinman standing alonside as an honored guest.

X-TG 140 193
S8

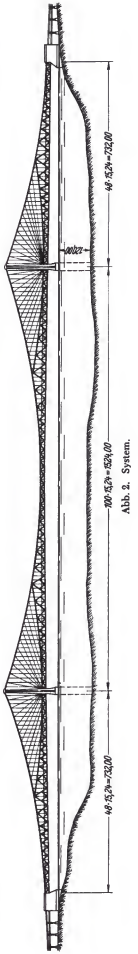


Abb. 2. System.

Hängebrücke über die Straße von Messina.

Die Meerenge von Messina zwischen dem italienischen Festland und Sizilien, Homers Scylla und Charybdis, wird wegen ihrer schnell wechselnden Gezeiten, der starken Strömungen und Wirbel und wegen der starken Stürme seit alter Zeit von der Schiffahrt gefürchtet. Der Verkehr über die Straße wird jetzt von einer viel gefährdeten Eisenbahnfähre vermittelt und ist auf jährlich 280 000 Wagenladungen angestiegen. Von ihm hängt im wesentlichen



Abb. 1. Ansicht.

die Ausfuhr Siziliens ab, die hauptsächlich aus Südfrüchten besteht. Eine feste Brücke — ein Tunnel kommt wegen der Wassertiefe von 120 m nicht in Betracht — würde die Gefahren des Fährverkehrs ausschalten und den Verkehr beschleunigen. Sie würde ferner einen motorisierten Verkehr möglich machen und den Touristenverkehr nach Sizilien

X-TG 140

ΑΤΛΑΝΤΙΣ

"ATLANTIS", AN AMERICAN NEWSPAPER PUBLISHED IN GREEK

NEW YORK, SATURDAY, OCTOBER 9, 1954.

ΤΟ ΠΑΡΑΣΗΜΟΝ ΑΓ. ΔΙΟΝΥΣΙΟΥ ΕΙΣ ΔΙΑΠΡΕΠΗ ΑΜΕΡΙΚΑΝΟΝ

NEW YORK, N. Y. — Ὁ διάσημος ἀμερικανὸς μηχανικὸς DR DAVID B. STEINMAN, περίφημος διὰ τὰ σχέδια καὶ κατασκευὴν γεφυρῶν, ἀνὰ τὰς πέντε ἠπείρους, ἐτιμήθη ἐχθὲς διὰ τοῦ παρασήμου τοῦ Μεγαλοσταύρου τοῦ Τάγματος Ἱπποτῶν τοῦ Ἁγίου Διονυσίου Ζακύνθου, διὰ τὴν μεγίστην του εἰσφορὰν πρὸς ἀνασυγκρότησιν τῆς Φιλαρμονικῆς Μπάντας τοῦ Δήμου Ζακυνθίων.

Ὁ DR. STEINMAN, εἶναι ἱππότης τῆς Λεγεῶνος τῆς Τιμῆς τῆς Γαλλίας. Ἔχει τιμηθῆ διὰ πλείστων παρασήμων ὑπὸ διαφόρων κρατῶν, καὶ τοῦ ἔχουν ἀπονεμηθῆ ἄνω τῶν 16 HONORARY DEGREES ὑπὸ τῶν διασημοτέρων καὶ ἀρχαιοτέρων Πανεπιστημίων τοῦ κόσμου, ὅπως τοῦ COLUMBIA UNIVERSITY, UNIVERSITY OF GHENT (BELGIUM), UNIVERSITY OF BOLOGNA (ITALY), RENSSELAER POLYTECHNIC INSTITUTE, NOUBOLTAN COLLEGE, OHIO NORTHERN UNIV., καὶ ἄλλων, εἰς ἀναγνώρισιν τῶν ὑπηρεσιῶν του πρὸς τὴν ἀνθρωπότητα



DR. DAVID B. STEINMAN

ὡς μηχανικοῦ ἐπιστήμονος, μαθηματικοῦ, καλλιτέχνου, ἐφευρέτου, ἀρχιτέκτονος γεφυρῶν, συγγραφέως ποιητοῦ καὶ φιλανθρώπου.

Τὸ παράδειγμα τῆς ζωῆς καὶ τοῦ ἔργου τοῦ Δρος DAVID B. STEINMAN, ἐμψυχώνει, καὶ ἐμπνέει χιλιάδας νέων μηχχανικῶν ὄχι μόνον ἐν Ἀμερικῇ, ἀλλὰ καθ' ὅλην τὴν ὑφήλιον.

Π. Β.

X-TG 140

Columbia Alumni News
October 1954

David B. STEINMAN, E, AM, '11PhD, bridge designer, is currently engaged in several building projects. Construction has recently been started on the Straits of Mackinac Bridge, which he designed, and the modernization of the Brooklyn Bridge was completed in May, also one of Dr. Steinman's projects. An estimation of costs for the modernization of Manhattan Bridge has been presented to the City Planning Commission by Dr. Steinman. He has also prepared plans to span the Strait of Messina to Sicily, and was awarded a gold medal July 6 in Rome, Italy, as the "greatest bridge designer."

X-TG 140

JOURNAL
of the
AMERICAN CONCRETE INSTITUTE
October 1954

Steinman honored in Europe

During his recent European tour, Dr. D. B. Steinman, internationally-known bridge engineer of New York City, received several honors.

In Rome, he was presented with a gold medal and specially engrossed diploma of honor by the International University Pro Deo.

In Paris, Dr. Steinman was presented with the Medaille de la Reconnaissance Francaise (Medal of French Recognition); there are only five prior recipients of this award. He was also presented the Gold Medal and Diploma of Honor of the French Society of Inventors, and a special gold medal of "Recognition by the Engineers of France." This medal, especially designed and minted, bears Dr. Steinman's sculptured portrait on the face and on the reverse a sculptured perspective of his design for the Messina Straits Bridge. Bronze replicas of this medal will be minted for future annual awards.

While in France, Dr. Steinman was also presented with the medal and diploma of honor of the Société Nationale des Medailles Civils, the Croix de Commandeur de l'Education Civique, Palme de Commandeur de l'Encouragement Public, and Croix de Commandeur de l'Etoile du Bien et du Merite.

X-TG 140



(NEWS foto by Bob Konie.)

Greek Pageant. Dr. David B. Steinman (center) is honored at the St. George Greek Orthodox Church's pageant and solemn consistory, never before photographed. Dr. Steinman, noted engineer, got grand cross.

X-TG 140
SS

AUGUST 1954

American Engineer

Dr. David B. Steinman, NSPE's distinguished first president, has recently been decorated with the French Legion of Honor by the Government of France. The presentation of the honor was made on behalf of President Coty of France by Count Jean de Lagarde, French consul general, at a ceremony and reception at the French consulate in New York City on Dr. Steinman's birthday. The citation accompanying the award took note of Dr. Steinman's accomplishments as a bridge-builder, author, and professional leader as well as his contributions toward the strengthening of international friendship.

X-TG 140

France-Amérique

LE JOURNAL FRANÇAIS DES ETATS-UNIS

DIMANCHE 24 OCTOBRE 1954

M. Steinman à l'honneur

Au cours d'une cérémonie qui a eu lieu le dimanche 17 octobre, dans le Grand Amphithéâtre de la Sorbonne, à Paris, la Grand Croix de l'Etoile du Bien et du Mérite a été décernée au Dr Albert Schweitzer, Prix Nobel de la Paix 1953, et à M. David B. Steinman, de New-York, grand ami de la France.

X-16 [illegible]

JUNE 1954

American Engineer

Dr. David B. Steinman, NSPE's first president and internationally eminent bridge engineer, received the honorary degree of Doctor of Engineering at the commencement convocation of the Michigan College of Mining and Technology, Houghton, Mich. Dr. Steinman, who was also the commencement speaker, delivered an address on "The Professional Man and His Ideals."

JULY 1954

NSPE's first president, Dr. David B. Steinman, received the honorary degree of Doctor of Civil Engineering in a special ceremony June 30 at the University of Bologna in Italy, reportedly the oldest university in the world.

Dr. Steinman has been visiting Italy for conferences with the authorities in regard to the development of plans for the financing and construction of the Messina Straits Bridge to connect Italy and the island of Sicily. The projected suspension bridge, which has been designed by Dr. Steinman, is to have a main span of 5,000 feet, which will be the longest such span in the world.

X-TG 140
S8

X-TG140.S8 #96

NORWEGIAN AMERICAN TECHNICAL JOURNAL

Vol. 21, No. 1 May, 1954

PARTNERS

By D. B. Steinman

I planted a seed and added my love
To the sunshine and life-force that came from above.
I thrilled to behold how Thy magic power
Made each bud unfold as a beautiful flower.

I groped for the music and words to impart
The gladness and longing that sang in my heart.
The stars brought Thy melody, lingering long,
And my heartstrings recorded the Heaven-born song.

I quarried the rock and carved it with care
To build a cathedral for worship and prayer.
My soul sang Thy story—compassion divine—
As I wrought in Thy glory a reverent shrine.

A flower, a song, or a soul-lifting shrine—
My own share is humble, the magic is Thine.
Though lowly my part, I am thankful to be
Co-working in beauty as partner with Thee!

TG 140
S8

Enthusiastic Crowd Assembles in Akron for

76th Ohio Society Convention

THE rafters of Akron's Mayflower Hotel shook with enthusiasm on March 25-27 as more than 900 conventioneers met for the 76th Ohio Society convention. For three full days, members, ladies, and guests responded to a whirlwind program of top-notch business sessions and speakers, lively parties, and all-round good fellowship.

Awards

The most prominent presentation during the convention was the awarding of the OSPE Citation and Award to D. B. Steinman, world-famous bridge designer and first president of NSPE. Dr. Steinman accepted the award at the annual banquet. (See cover picture.)

GIFT
DR. D.B. STEINMAN
MAY 20 1955

Excerpts from May, 1954, Ohio Engineer

X-TG 140
S8

X-TG 140.S3 #76

Poems for Your Scrapbook

SO LITTLE DOST THOU ASK OF ME

By D. B. STEINMAN

How beautiful my garden grows,
So grateful for a little care;
I thrill to see each budding rose
With fragrance like a thankful prayer.

A little bird-food I supply,
How joyously the birds repay:
On topmost boughs against the sky,
They sing for me all through the day.

I try to do my little part
To spread some kindliness and cheer;
As radiant sunshine floods my heart,
I hear a whisper, God is near!

O Lord, for all Thy boundless grace,
So little dost Thou ask of me:
To make a simple dwelling place,
A corner in my heart for Thee.

(Reprinted from The Boston Post of May 12, 1954)

X-TG 140
S8

BOSTON POST, FRIDAY, FEBRUARY 19, 1954

Poems for Your Scrapbook

AN ANGEL CAME TO DWELL WITH ME

By D. B. STEINMAN

An angel came to dwell with me,
A woman, humanly divine;
My life became a melody,
My love a hymn, my heart a shrine.

When I was sad with care and strain,
My solace was her tenderness;
For every sorrow, every pain,
Her love was there, to heal and bless.

When years of thankless toil slipped past,
I found my guerdon in her eyes;
And when life's laurels came at last,
Her tears of gladness were my prize.

In sunset glow, as shadows fall,
I watch the light of day depart.
O, evening star! I hear your call
To join the one who holds my heart.

X-TG 140
S8

X-TG 140.S8 #100

Their Song Lives On

By D. B. Steinman

The torch we kindle glows beyond the night
And in the gleam afar we live again.
With starlike rays of kindness, love and light,
We build a heaven in the hearts of men.

We hear ethereal music and aspire
To dwell in beauty where the soul is free;
On wings of love we join the heavenly choir
Whose anthem rings through all eternity.

They live again whose glow made life sublime;
Their star still shines to lead us toward the goal;
Their song lives on until the end of time
To make immortal music for the soul.

Reprinted From
Poems for Your Scrapbook
Boston Post
April 21, 1954

SER. II, VOL. 16 *January, 1954* No. 3

TRANSACTIONS
OF
THE NEW YORK ACADEMY OF SCIENCES

PRESENTATION OF CITATIONS ON BEHALF OF THE CONSULAR LAW SOCIETY

By BERNARD A. GROSSMAN
President

President Steinman, Members of The New York Academy of Sciences, and their guests:

I have the honor to come here tonight on the other side of recognition, as the representative of the Consular Law Society, whose members, in their specialized fields, represent the family of nations, and who have seen something of the impact of The New York Academy of Sciences across the world. While it is traditional for the Academy to give recognition to others, yet, tonight, we would like it to receive the recognition which I have come here to express on behalf of the Consular Law Society. It is in the form of a Citation, and reads as follows:

CITATION TO THE NEW YORK ACADEMY OF SCIENCES

The Consular Law Society takes great pleasure in presenting this citation to The New York Academy of Sciences as a noteworthy institution unique in fulfilling its stated and progressive aims of fostering a generous exchange of the results of scientific research between investigators both nationally and internationally; it has become preeminently successful in the establishment of strong cordial relationships between scientists of many countries and the United States through their mutual participation in its many activities, including its conferances and other meetings; by the high standard achieved in its publications and their international circulation, it has given the scientific world a greater facility for the exchange of the most recent and most pertinent data in the embodiment of such scientific investigations in its outstanding monographs; and in serving as a Science Center in New York City, it has encouraged the growth and expansion of many cognate societies by generously making its accommodations and services readily available to such organizations, the most recent of which is the new International Research Center of the Cooperative Research Foundation.

Citation to Doctor David B. Steinman

The Consular Law Society takes great pleasure in presenting this citation to David B. Steinman, outstanding Consulting Engineer, and the world's most noted Bridge Designer and Bridge Engineer, Civil Engineer, Doctor of Philosophy, Doctor of Science, President of The New York Academy of Sciences, 1953, and author of many books on Bridge Building, in recognition of his famous and important part in designing and constructing many of the world's most beautiful and famous bridges, including, among others: Florianopolis Bridge in Brazil (largest bridge in South America); Carquinez Strait Bridge, California (largest cantilever bridge in the United States); St. John's Bridge, Portland, Ore. (largest and highest span in the Northwest); Sydney 'Harbor Bridge, Australia; Mt. Hope, R. I., Bridge (largest bridge in New England); Tri-Borough and Henry Hudson Bridges, New York City; Thousand Islands International Bridge (five bridges); Deer Island Bridge, Maine; Charter Oak Bridge, Hartford, Conn.; and many others on five continents. He was also the modernizer of the Brooklyn Bridge and inventor of new influence line methods and charts for design of railway bridges; of improvements in suspension bridge design, and of a new system of design loading for railway bridges. Doctor Steinman's inclusion of exquisite beauty in the design of these great bridges of the world is especially noteworthy.

Doctor Steinman, during this year of his presidency, has continued with success the progressive program of activities and expansion of the Academy.

A-16 140
S6

THE NEW YORK TIMES, WEDNESDAY, MAY 5, 1954.

OPEN AGAIN

Both the East River and the Hudson River are spanned by great bridges, but the old Brooklyn Bridge, built by the Roeblings and ceremoniously dedicated in 1883, is the one that commands the admiration of the city and of civil engineers. The old bridge, which seems to inspire more reverence as the years go by, is now fully open again after four years of work, with six ten-foot lanes over which 50,000 vehicles may pass daily instead of 37,000. Luckily the city had in Dr. David B. Steinman an engineer who has studied the bridge for two decades.

As an engineering design the Brooklyn Bridge is outmoded. Suspension systems are simpler today. The diagonal stays would certainly go by the board if the bridge were drastically rebuilt, and there would be fewer and stronger suspenders. Yet these antiquated steel filaments give the old bridge a lacy quality that harmonizes singularly well with the massive stone towers.

Washington Roebling, who carried out the plans of his father, John Roebling, estimated that the bridge would sustain two and a half times its colossal weight and that the cables would uproot the anchorages before they broke. We have Dr. Steinman's assurance that, properly maintained, the bridge is good for centuries. So the old structure will go down both as a monument to the Roeblings and as a work of art.

X-TG 140
S8

First President of NSPE To Receive Ohio Citation and Award



D. B. Steinman (right) as he received the NSPE Award from John D. Coleman in 1952.

By George W. Clark

TENTH in a series of eminent engineers the Ohio Society has chosen to single out for a Citation in the past dozen years, D. B. Steinman, the current recipient, epitomizes those personal qualities which should be the goal of all engineers — a thorough educational grounding in the engineering sciences, a continued discipline in the fringe areas of engineering knowledge calling for concise original thinking and analysis, and a complete confidence in the results of analytic design which have produced some of the world's greatest and most beautiful bridges.

When D. B. Steinman is presented with a Citation at the Akron Convention, the Ohio Society in a sense will receive honor as much as it will give it. An honorary member of OSPE since 1935, engineer Steinman reflects honor on the Ohio Society with every distinction bestowed on him.

A sampling of these awards discloses how wide is his acclaim: the NSPE award — so far granted to President Hoover, D. B. Steinman and Charles F. Kettering; Doctor of Science in Engineering by Ohio Northern; Doctor of Science by the University of Ghent, Belgium; honorary membership in several State societies of N.S.P.E., the Legion Belge, the Free French War Veterans, the Société des Ingénieurs Professionnels de France; Fellow of Great Britain's Royal Society of Arts; and the holder of the following decorations and Crosses: Military Order of Cyprus and Jerusalem; Commander, Grand Prix Humanitaire de Belgique; Knight and Companion, Ordre des Chevaliers de la Croix de Lorraine et des Compagnons de la Résistance.

He now holds a total of 14 university degrees, 4 earned and 10 honorary.

D. B. Steinman was born in New York City June 11, 1886; graduated Summa Cum Laude from C.C.N.Y. at the age of twenty; from Columbia University he successively earned the C.E. degree in 1909; the A.M. degree in 1909; and the Ph.D. degree in 1911, a good share of the time his studies being subsidized by fellowships.

He is a member of Phi Beta Kappa and Tau Beta Pi. For several years he was professor of engineering at the University of Idaho and at C.C.N.Y. and has written numerous technical papers and treatises. From his facile pen have come several poems which mark this engineer as being also a philosopher with deep religious inspiration.

From the beginning of his career he was partial to bridge design and construction and soon had his own private practice. To list the bridges that stand as mute evidence of his engineering excellence would take up too much space and be uninspiring without a view of the magnitude and beauty of individual specimens. The same would be true of a list of the engineering societies, councils and committees to which he has devoted unselfishly his time and talents toward the creation of a greater profession; these accomplishments and many others may be found in Who's Who in America.

Of special interest to members of the Ohio Society is his record as founder and first president of the National Society of Professional Engineers, and of the many years of faithful service rendered to make our society strong.

When the Board of Trustees voted on January eighth to grant him a Citation, it chose to recognize one of its most distinguished members. His life has been an inspiration to all of us who have known him. The permanent record of his citation in our files will serve as a constant reminder to all of us that "Every man owes some of his time and devotion to the upbuilding of the profession to which he belongs."

REPRINTED FROM MARCH 1954 ISSUE, THE OHIO ENGINEER

X-TG 140
S8

X-TG 140. S8 #104

What Is Man, That Thou Art Mindful of Him?

In starry space the awestruck mind beholds
Vast galaxies in ranks beyond surmise;
Each spiral glow of clustered light unfolds
A myriad stars ablaze in far-off skies.
Of all this host some fate elected one
To be the sun of life and light for man;
Of all the globes that wheel around the sun
God chose our humble planet for His plan.
Beneath a rainbow flung across the earth
The miracle of life began its climb,
Until at last the human soul had birth
With god-like flame transcending space and time.
O, what is man, in all this boundless space
That Thou hast made his heart Thy dwelling place?

D. B. STEINMAN
Honorary Alumnus 1953

Reprinted from The Manhattan Quarterly, Spring, 1954.

X-T6 14
S8

STATE JOURNAL (Lansing, Mich.) Wednesday, Feb. 24, 1954

Building of Straits Bridge To Fulfill Cherished Dream

Construction of World's Longest Span Will Cap Career of Noted Engineer

By TOM FARRELL
(United Press Staff Correspondent

A life-long dream will be realized for David Barnard Steinman when construction of the Mackinac straits bridge starts this spring.

Steinman, who designed the five-mile span and will be chief engineer during its construction, has always wanted to build the world's longest bridge.

During the last 40 years, Steinman has built many of the world's greatest bridges, including the "longest" spans in several parts of the world and the longest cantilever bridge.

Steinman, who is 67, received all of his engineering education at City College of New York and Columbia university, where he was awarded his doctor's degree in engineering in 1911.

During his early life he was torn between working as an engineer and teaching.

TAUGHT IN IDAHO

In 1910, after working for several years for eastern engineering firms, he went to the University of Idaho where he was professor in civil engineering until 1914.

From 1914 to 1917, he worked on several notable bridges including the famous Hell Gate arch bridge at New York.

In 1917 he returned to teaching, this time at his alma mater, Columbia, where he was in charge of the civil and mechanical engineering departments. He left Columbia in 1920 and has been building bridges full-time ever since.

During the 1920s, he designed and supervised construction of a suspension bridge at Florianopolis, Brazil, which still is the longest span in South America; Carquinez strait bridge, Cal., longest cantilever bridge in U. S.; and St. John's bridge, Portland, Quebec, longest and highest span in the northwest.

From 1930 until World War II began, Steinman built bridges in Australia, Germany, and spans at Mt. Hope, R. I., the longest span in New England; Sky Ride suspension span at the Chicago world's fair, listed as the eighth longest in the world; Henry Hudson bridge, New York; Waldo Handock bridge in Maine; Thousand islands international bridges (five in all) over the St. Lawrence river, Deer Isle-Sedgwick bridge in Maine, Lions Gate bridge, Vancouver, British Columbia, and the Charter Oak bridge, Hartford, Conn.

From 1948 to 1950, he supervised reconstruction of the famed Brooklyn bridge and for the last several years has worked on plans for the Mackinac bridge.

The Mackinac straits bridge, although its 3,800-foot suspension span will be 400-feet shorter than



DAVID BARNARD STEINMAN

the 4,200-foot Golden Gate suspension, the bridge itself will be the longest ever built.

Its total length will be 26,195 feet while the length of the main suspension span and the north and south truss spans will be 17,918 feet, almost twice as long as the 9,266-foot Golden Gate bridge.

Chairman Prentiss Brown of the Mackinac bridge authority said last week that engineers hope they will have the bridge completed by June 1, 1957, instead of Nov. 1, 1957, as originally planned.

And there's a good chance that if construction of the bridge is completed six months earlier, it will be opened to traffic June 11, 1957.

Steinman will be 71 years old on that day.

"What could be nicer than to finish the greatest chapter in Dr. Steinman's life by opening his greatest project on his birthday?" one authority member said. "I hope it works out that way."

X-10 14
S8

SUNDAY MIRROR MAY 16 1954

IN A GARDEN LONG AGO

I remember Summer roses in a garden long ago;
You were with me, my beloved, In the golden moonlight glow.
A nightingale was singing in the dreamy woodland grove
And all the longing of my heart was in his song of love:
You are sweet, sweet, my darling.
Oh, my love, I love you so!
The nightingale was singing in a garden long ago.

I remember Summer magic, all the sweetness in the air,
The honeysuckles blending with the fragrance of your hair.
The melody of moonlight and the lovelight in your eyes
Were mingled with the glory of the stars that filled the skies.
You are sweet, sweet, my darling,
Oh, my love, I love you so!
All the stars were singing in a garden long ago.

—D. B. Steinman.

Professional Record of D. B. Steinman

FAMOUS AMERICAN BRIDGE ENGINEER.

Reprinted from "Who's Who In America," Vol. 28, 1954-55.

STEINMAN, David Barnard, bridge engr.: b. New York, N. Y., June 11, 1886; s. Louis Kelvin and Eva (Scollard) S.; B.S., summa cum laude, Coll. City of New York, 1906 (3 yrs.' fellowship in mechanics); C.E., Sch. of Mines (Columbia), 1909 (2 years' scholarship in applied science); A.M., Columbia, 1909, Ph.D., 1911 (1 yr. scholarship in engring.); ScD., Coll. City N. Y., 1947, Columbia U., 1953; E.D. (hon.), Manhattan Coll., 1953, Rensselaer Poly. Inst., 1953; Ohio Wesleyan U., 1953; D.Sc. in engring., Sequoia U., 1953; LL.D., Alfred U., 1953; D.Sc. (hon.) U. Ghent (eBlgium), 1953, Minerva U., Italy, 1953; Dr. C.E. (hon.), U. Bologna, 1953; m. Irene Hoffman, June 9, 1915; children —John Francis, Alberta, David. Engring. work until 1910; prof. civ. engring., U. of Ida., 1910-14, also cons. practice; spl. asst. to Gustav Lindenthal on design and constrn. Hell Gate Arch Bridge and other notable bridges, 1914-17; prof. in charge civ. and mech. engring., Coll. City of New York, 1917-20; cons practice since 1920. Designing or cons. engr. many notable bridges, incluuding: suspension bridge at Florianopolis, Brazil (largest bridge in S. A.), 1922-26; Carquinez Strait Bridge, Calif. (longest cantilever bridge in the U. S.), 1923-27; bridge at Grand Mere, Quebec, Can., 1928-29; St. John's Bridge, Portland, Ore. (longest and highest span in the Northwest), 1929-31; Sydney Harbour Bridge, Australia; Cologne-Muhlheim Bridge over the Rhine, Germany; Mt. Hope (R. I.) Bridge (longest span in New Eng.), 1927-29; Waldo Hancock Bridge, Me., 1930-31; Tri-Borough Bridge, N. Y. City; Sky-Ride and Observation Towers (Century of Progress Expn., Chicago), 1933; Henry Hudson Bridge, N. Y. City; Thousand Islands internat. bridge, over St. Lawrence River (5 bridges). 1937-38; Deer Isle-Sedgwick Bridge, Me., 1938-39; Lions Gate Bridge Vancouver, B. C., Can., 1937-39; Charter Oak Bridge, Hartford, Connecticut, 1941-42; and others on 5 continents; engaged in reconstrn. Brooklyn Bridge, 1948-53. Vice pres. Tioga-Nichols Bridge Co., Smithboro Bridge Co., dir. Independence Bridge Co., Interboro Bridge Co., Richmond-Hopewell Bridge Co.; pres. Pan-American Public Works, Inc. Chmn. for N. Y. State, Nat. Com. for Trade Recovery, 1933-34; mem. senate Columbia U. Dept. Engring.; mem. exec. com. Engrs. Council for Professional Development; pres. Am. Toll Bridge Assn., 1932-34. New York Academy Sciences, 1952-53; hon. v.p. and mem. adv. council, Layman's Nat. Com. Inventor of new influence line methods and charts for design of rybridges: improvements in suspension bridge design; new system of design loading for ry. bridges; simplified methods of analysis for bridge design; aerodynamic analysis of suspension bridges. Lecturer on bridge design at universities and colls. Trustee French University in N. Y., Fellow Aerial League Am., A.A.A.S., Am. Geog. Soc., Royal Soc. of Arts (life fellow), life mem. Societe des Amis d' Andre-Marie Ampere (France), Phi Beta Kappa Assos., Am. Soc. C.E. (chmn. structural div. 1931-33; vice pres. Met. Sect. 1933-34, pres. 1946-47); mem. Colegio de Ingenerios de Puerto Rico, N. Y. Good Roads Assn., Cooper Union Alumni Association, International Association Bridge and Structural Engineers, Am. Assn. Engrs. (pres. 1925-26), Nat. Soc. Professional Engrs. (founder, pres. 1934-36), N. Y. State Soc. Professional Engrs. (pres. 1930-33, chmn. bd. 1933-43), N. Y. State Bd. Examiners for Professional Engrs. and Land Surveyors (vice chmn. 1931-33, chmn. 1933-35, 1941-43, 1945-47), Nat. Council State Bds. of Engineering Examiners (president 1931-32), American Engineering Council (committee on bridge legislation 1930-34), Brooklyn Engrs. Club (pres. 1931-33) Am. Ry. Engring. Assn., Am. Soc. for Testing Materials, Am. Concrete Inst., Am. Mil. Engrs., Internat. Inst. Am. Ideals (hon.), French Folklore Soc. (hon.), Patrons of Rensselaer (charter mem.), N. Y. State Association Architects, Am. Soc. for Engring. Education, Association Alumni Coll. of City of N. Y. (v.p. 1930-31; dir. 1947-49), Engring. Institute Can., Internat. Assn. Bridge and Structural Engrs., Assn. pour le Developpment de l' Electromechanique et de l' Electrometallurgie (hon., France), Engrs. Council Prof. Coll. Alumni (founder, dir.), Municipal Engrs. of N. Y., Corp. of Professional Engrs. of Quebec, Professional Engrs. of Ore., Ida. Soc. of Engrs., Am. Inst. of N. Y., Nat. Pub. Housing Conf., Advisory Council of City Charter Com. of N. Y., Am. Math. Soc., Acad. Polit. Sci., Met. Regional Com. Engrs. Employment and Salaries (chmn. 1933-34), Architects and Engineers Alliance (honorary), Ohio Society Professional Engrs. (hon.), Kentucky Soc. Professional Engrs. (hon.), Tex Soc. Professional Engrs. (hon.), life member Nassau County Chapter, N. Y. State Soc. of Professional Engrs.; hon. mem. Engineering Alumni of Coll. of City of New York; life mem. Professional Engrs. of Oregon; mem. (hon.) Hudson County Soc. Professional Engrs.; mem. Phi Beta Kappa (pres. N.Y. chapter, 1933-34). Registered professional engr. in N.Y., Ore., Ill., Me., Ia., Conn., Fla., Ohio, La., Neb., Quebec, Ont. British Columbia, Puerto Rico, N.J., Mich. Major, Corps Engrs. N.Y.N.G. Award J. James R. Croes medal, 1919, Norman medal, 1923, Thomas Fitch Rowland prize, 1929—all by Am. Soc. C.E.; artistic bridge awards, Am. Inst. Steel Constrn., 1930, 32, 37, 38, 39, 42; mem. tech. adv. bd. same; prize, Am. Assn. Engrs., 1926, for "Vow of Service," adopted for engring. profession; Alfred T. White prize, Brooklyn Engrs. Club, 1934; Townsend Harris medal for professional achievements, Association Alumni of Coll. City of New York, 1934, Alumni service medal, 1934; Columbia Medal for Excellence, 1947, Eggleston Medal ,1950; Eloy Alfaro Cross (Republic of Panama). Clubs: Columbia University, Engrs. of New York, Millions of Sydney, Australia (honorary member), Ends of the Earth. Author: Suspension Bridges, Their Design, Construction and Erection, 1923 and 1929; Suspension Bridges and Cantilevers, Their Economic Proportions and Limiting Spans, 1911. 1912; Theory of Arches and Suspension Bridges, from Melan, 1913; Concrete Arches, Plain and Reinforced from Melan, 1917; Continuous Bridges, in Movable and Long-Span Steel Bridges 1923; Suspension Bridges, in Movable and Long-Span Steel Bridges, 1923: The Wichert Truss, 1932; Stress Measurements on the Hell Gate Aich Bridge, with Appendix on Secondary Strusses in Hell Gate Arch, 1918. Locomotive, Loadings for Railway Bridges, 1922; Moments in Restrained and Continuous Beams by the Method of Conjugate Points, 1926; The Eye-Bar Cable Suspension Bridge at Florianopolis, Brazil, 1927; A Generalized Deflection Theory for Suspension Bridges, 1934; Bridges and Their Builders, 1941; Rigidity and Aerodynamic Stability of Suspension Bridges, 1943. The Builders of the Bridge, 1945; Aerodynamic Theory of Bridge Oscillations, 1949; Famous Bridges of the World, published, 1953. Associate editor Engineers Handbook Library, 1921-23. Contbr. Ency. Britannica, Ency. Americana, Collier's Ency. Presented with silver scroll, for contributions to advancement of engring., by 11 engring. socs., 1932. Inventor, improvements in stereo-photography. Home: 305 Riverside Drive. Office: 117 Liberty St., New York, N.Y.

S3 14

Contractors and Engineers
magazine of modern construction

SEPTEMBER, 1954

Three European Nations Honor D. B. Steinman

Dr. D. B. Steinman of New York, N. Y., internationally known bridge engineer, was awarded new decorations and honors during a recent tour of European countries. Both professional and civic recognition was paid to the world famous engineer in Italy, France, and Belgium.

In Italy, Dr. Steinman was given an honorary degree of Doctor of Civil Engineering by the University of Bologna and a gold medal and a diploma of honor by the International University Pro Deo at Rome.

In Paris, he was presented with the French Medal of Recognition; the Gold Medal and Diploma of Honor of the French Society of Inventors, signifying "recognition by the engineers of France"; and the medal and diploma of honor of the Societe Nationale des Medailles Civils.

Just before returning to this country, Dr. Steinman received three additional French decorations for his services to public interests and education.

X-TG 140
S8

WORLD'S LONGEST SUSPENSION SPAN

Is Proposed Messina Straits Bridge

By Dr. David B. Steinman
Consulting Engineer, New York, N.Y.

Reprinted from ROADS AND ENGINEERING CONSTRUCTION, *July, 1954.*

PRINTED IN CANADA

X-TG 140
S8

X-TG 140 S8 #10

BRIDGES

by DAVID B. STEINMAN
CONSULTING ENGINEER

REPRINTED FROM
SCIENTIFIC
AMERICAN
NOVEMBER 1954

TG 140
S8

LE PROJET DE PONT SUSPENDU ENTRE L'ITALIE ET LA SICILE

La construction au-dessus du détroit de Messine, entre l'Italie et la Sicile, d'un pont suspendu servant à la fois au trafic ferroviaire et routier est actuellement envisagée par les autorités italiennes. L'étude de ce projet a été confiée à M. Steinmann, spécialiste américain des grands ponts suspendus.

Ce pont (fig. 1, 2 et 3) (1), qui aura une longueur totale de 3 200 m environ, comprendra une travée centrale de 1 524 m de portée, la plus grande du monde, et deux travées latérales de 732 m chacune. Ces travées seront donc elles-mêmes plus longues que les travées médianes de tous les ponts suspendus actuellement existants, à l'exception de celles des ponts de la Golden Gate (2), George Washington (3) et du Tacoma.

Les deux piles principales seront édifiées sur des assises rocheuses situées à 120 m de profondeur, ce qui constitue également un record. Les deux massifs d'ancrage des câbles seront construits en eau peu profonde, à proximité du rivage. Les poutres de rigidité, en treillis métallique auront une hauteur de 55 m à la moitié de chacune des travées latérales, ainsi qu'aux deux points situés au quart de la longueur de la travée médiane. Leur forme inusitée s'explique parce que leur membrure supérieure rejoindra en ces points les câbles de suspension.

Un système de câbles de raidissage disposés radialement ferait de ce pont, suivant l'auteur du projet, en dépit de sa très grande longueur, le plus résistant de tous ceux qui aient jamais été construits. Ce nouveau mode d'exécution, destiné à augmenter considérablement la rigidité de l'ouvrage, a dû être envisagé, d'une part, en raison du trafic ferroviaire et, d'autre part, du fait que le nouveau pont doit pouvoir résister aux efforts exercés par le vent, et éventuellement à des tremblements de terre.

Le problème se pose de la manière suivante. En raison de la profondeur du détroit et des frais très élevés de construction des piles principales, il est indispensable de réduire au minimum le nombre de celles-ci. D'autre part, pour obtenir la très grande rigidité nécessaire, les portées admises ne doivent pas être trop longues. L'étude de ces deux conditions conduit à prévoir, pour la travée centrale, une portée de 1 500 m, la plus courte que l'on puisse admettre en réduisant à deux le nombre des piles en eau profonde.

La construction de l'ouvrage est rendue encore plus difficile par les conditions physiques régnant dans le détroit de Messine, connu pour la force de ses courants, la rapidité de ses marées montantes et la violence de ses tempêtes. A ces difficultés viennent s'ajouter les risques de secousses sismiques dus à la proximité de plusieurs volcans.

La plupart des problèmes posés par la construction de ce pont ont pu être résolus théoriquement par simple extrapolation, grâce à la très grande expérience acquise antérieurement dans

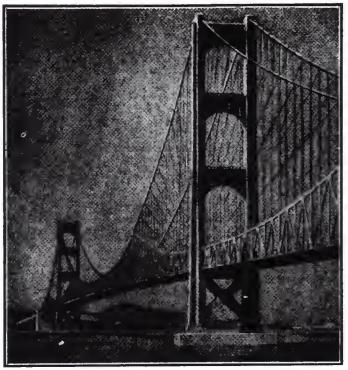


Fig. 1. — Vue de la maquette du pont suspendu de Messine.

la construction de ponts suspendus du même genre, mais de dimensions plus réduites, par M. Steinmann.

Le mode de construction du pont proprement dit a été dicté par des considérations d'ordre esthétique, aussi bien que technique. En effet, en raison de la beauté naturelle du lieu, il est indispensable que l'ouvrage soit en harmonie avec le paysage et l'on s'est efforcé de lui donner des formes aussi élégantes que possible. En ce qui concerne l'aspect technique du problème, l'auteur du projet avait montré, dans une thèse soutenue en 1911, que les ponts suspendus pour chemins de fer doivent, pour avoir la rigidité nécessaire, être munis de poutres de rigidité en treillis ayant une hauteur au moins égale au 1/40e de la portée. Ces poutres sont destinées à limiter les flexions dues aux charges mobiles, généralement beaucoup plus concentrées dans le cas des ponts de chemin de fer que dans celui des ponts routiers.

5
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JAN 29 1954

ÉTOILE DU BIEN ET DU MÉRITE

(Enregistrée sous le N° 3201 - Loi du 1er Juillet 1901 - Décret du 16 Août 1901)

Le Dimanche 17 Octobre 1954

★ ★ ★ ★

FÊTE ANNUELLE

de remise de Récompenses honorifiques

Grand Amphithéâtre de la SORBONNE

★

PALMARÈS

★

PROGRAMME

★

Mme DIDIER - **Versailles**, M. FRICOUT - **Sotteville-les-Rouen**, M. LEPREVOST - **Aix-les-Bains**, Mlle ANDRÉ - **Lille**, M. CAUWEL - **Mantes-Gassicourt**, M. FOUCADE - **Perpignan**, M. LOURMAND.

A L'ÉTRANGER

Egypte, M. Jean MARCELIN - **Milan**, Dr Humberto GANZANIO - **Trieste**, Pr AURELIO - **Udine**, Pr SÉVERINO - **Allemagne**, Pr E. ZIMMERMAN - **Cuba**, Pr José FERNANDEZ - **Londres**, M. SYDNEY - **Naples**, Pr Luigi BELLOTTI - **Athènes**, Pr N.-D. EGHINITIS - **Rome**, Princesse Dr Verocina FADDA - **Madrid**, S. M. Eugénio-Lascaris COMMENO

PALMARÈS 1954

GRAND'CROIX

SCHWEITZER Albert, docteur en médecine, Officier de la Légion d'honneur, né à GUNSBACH en Alsace; ancien professeur à l'Université de Strasbourg, docteur en théologie, humaniste réputé, philosophe, écrivain, organiste fameux, critique musical, conférencier, titulaire du prix GŒTHE en 1928, élu en 1951 à l'Académie des Sciences Morales prix NOBEL de la PAIX en 1953; a créé en pleine brousse, à LAMBARÉNÉ, au Gabon, un village, un hôpital pour 200 malades et une léproserie.

Les indigènes du GABON l'appellent : « Le Grand Docteur ». La revue américaine LIFE l'a nommé : « Le plus grand homme du monde ». Les Etats-Unis voient dans ce médecin de la brousse « l'esprit le plus largement universel ».

« Respecter la vie » : telle est la devise du Dr SCHWEITZER qui a estimé que la respecter c'était d'abord la sauver et a dit : « Il n'y a pas d'autre façon d'être heureux que de chercher le bonheur des autres. »

L'Etoile du Bien et du Mérite s'honore en décernant sa Grand'Croix à ce Grand Serviteur du Bien Public.

M. STEINMAN David-Bernard, né le 11 juin 1886, à NEW-YORK (U. S. A.).
- Ingénieur-conseil à NEW-YORK (U. S. A.), docteur-ingénieur, docteur ès sciences, docteur en philosophie, docteur en droit honoris causa.
- Président de l'Académie des Sciences de New-York, président général de l'Union Internationale des Ingénieurs Professionnels, fondateur et premier président de la Société Nationale des Ingénieurs Professionnels des Etats-Unis.
- Ingénieur-constructeur de ponts; universellement connu car il compte à son actif plus de 300 ponts dans les continents.
- Auteur de nombreux ouvrages techniques et scientifiques, inventeur éminent, savant, éducateur, poète, grand ami de la France.
- Titulaire de la Légion d'honneur et de plusieurs ordres français et étrangers, ainsi que lauréat de nombreuses médailles d'or décernées pour ses travaux de Génie civil qui font gloire à l'Art et la Science de l'Ingénieur dans le monde entier.

et titulaire de :
- la Médaille d'Or de la Renaissance Française ;
- la Médaille d'Or de la Reconnaissance des Ingénieurs Professionnels Français (médaille frappée à son effigie) ;
- la Médaille d'Or de l'Union Française des Inventeurs.

Par l'ampleur de son travail, par son activité professionnelle et intellectuelle, le Docteur STEINMAN a rendu les plus grands services à son pays, à la France dont il est un Grand Ami et au Monde Entier.

Il a contribué sur les plans, technique, économique, et social, au Progrès et donc au bien être de l'Humanité.

COMMANDEUR

ARBAULT Claudie	Lauréate du Cours de Rédaction littéraire de l'Ecole A. B. C (1936). Lauréate des Poètes Français. A obtenu de nombreux prix. Lauréate de différentes Académies.
BAT Bernard	Expert judiciaire et professeur. Licencié ès sciences commerciales.
CLEMENSAT Raymond	Chef du Service intérieur de la Sorbonne se dévoue aux œuvres mutualistes.

DYNA

ORGANO DE LOS ESTUDIANTES DE LA FACULTAD DE MINAS

Nº 69 Junio 1954

X-TG 140
S8 #113

PROYECTO PARA UN PUENTE GIGANTESCO



que comunique a Italia con Sicilia a través del Estrecho de Messina, ha sido realizado por el gran ingeniero científico norteamericano Dr. D. B. Steinman, a solicitud de las autoridades italianas, en 1950.

He aquí una información muy somera sobre las características de este proyecto extraordinario, según informaciones autorizadas por la propia memoria original del ingeniero Steinman:

El Puente ha de tener una luz central de 1524 metros y luces laterales de 732 metros cada una, lo que da un total de cerca de 3 kms. entre anclajes. La luz central va a ser la mayor del mundo. Las luces laterales, por su parte superan las luces centrales de casi todos los puentes del mundo si se exceptúan los de Golden-Gate, Washington y Tacoma.

Los lectores se darán mejor idea de la magnitud de este Proyecto, atendiendo al cuadro comparativo que aparece a continuación:

Puente	Luz en mts.	Año de terminación
Jorge Washington	1067,50	1931
Estrechos de Mackinac	1159,00	En Proyecto
Puerta de Oro (Golden Gate)	1281,00	1937
Pasos de Nueva York (New York Narrows)	1409,10	En Proyecto
Estrecho de Messina	1525,00	En Proyecto

Las pilas se van a fundar a 122 metros por debajo del nivel de aguas, en marea baja. Otro "récord" en la construcción de fundaciones marítimas. El puente tendrá dos pisos, en el inferior dos líneas férreas y en el superior una autopista. El costo de la obra ha sido apreciado en unos 60 millones de dólares (US).

El autor del Proyecto tiene entre sus numerosos títulos el muy bien logrado de *Presidente de la Asociación Mundial de Ingenieros Profesionales.*

GIFT
DR. D.B. STEINMAN
MAY 20 1955

Profesor
LUIS DE GREIFF BRAVO

ASSOCIATION NATIONALE DES MÉDAILLÉS DE LA RECONNAISSANCE FRANÇAISE



SEPTEMBRE 1954

GIFT
DR. D.B. STEINMAN
MAY 20 1955

#15

THE NEW YORK TIMES

Tuesday, July 6, 1954

BRIDGE TO SICILY URGED

Dr. Steinman in Italy to Discuss Plan to Span Messina Strait

Special to The New York Times.

ROME, July 5—Dr. David B. Steinman, United States bridge-builder, delivered a lecture here today on his latest and greatest project—a bridge over the Strait of Messina to connect Sicily with the mainland of Italy.

Dr. Steinman has been discussing his plan in a number of Italian cities and in Sicily, and there has been a good deal of discussion about it. None question Dr. Steinman's competence or the plan's feasibility, but the cost seems to have staggered the Italian imagination. The estimate he gave today at Pro Deo University is $150,000,000, but he says the money could be recaptured in thirty years, when the bridge would become the nation's property.

It would be one of the longest suspension bridges in the world—about two miles, with one huge span in the center a mile long. It also would have to be about the strongest steel suspension bridge because the strait has such a powerful current that it provided antiquity with the legend of Scylla and Charybdis.

GIFT
DR. D.B. STEINMAN
MAY 20 1955

Sunday, June 13, 1954

France Honors Dr. Steinman

The French Government has decorated Dr. D. B. Steinman, bridge engineer, with the Legion of Honor. The citation recorded his professional achievements and his contributions toward strengthening international relations.

Wednesday, July 7, 1954

Italians Honor Dr. Steinman

ROME, July 6 (AP)—Dr. David B. Steinman of New York, who has prepared plans to span the Strait of Messina to Sicily, was awarded a gold medal tonight as the 'greatest bridge designer." The Rev. Felix A. Morlion, Rector of the International Catholic University for Social Studies, made the presentation in the name of a committee of representative Italians.

X-TG-140

BOSTON POST, THURSDAY, OCTOBER 28, 1954

We note that Dr. David B. Steinman's fine poem, "Suspension Bridge," has won a place in the Australian Engineer magazine. It is reprinted from The Post where it first appeared on April 3, 1953. Dr. Steinman is one of the world's outstanding bridge builders, and the poetry he creates is as beautifully balanced in its literary structure as is each bridge that has seen reality from the designing board of the versatile engineer.

Key to Engineering Ethics

Demineralization vs Evaporation

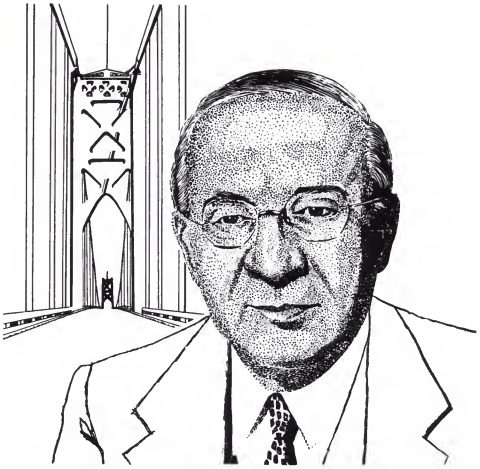
Engineers and Product Development

Rehabilitating a Viaduct

Cybernetics and Engineering

Management Consulting

Liquid Level Control



. . . *The builder's dream is there—*

Excellence in Design

DAVID BARNARD STEINMAN had hardly finished hanging out his professional shingle back in 1921 when the chance came for him to design the Florianopolis Bridge in Brazil, first of the distinguished series of bridges which have made him America's best-known bridge engineer. In that

February 1954

BTG 140
.S8

WHAT IS MAN

that Thou art mindful of him?

By D. B. Steinman

In starry space the awestruck mind beholds
Vast galaxies in ranks beyond surmise;
Each spiral glow of clustered light unfolds
A myriad stars ablaze in far-off skies.
Of all this host some fate elected one
To be the sun of life and light for man;
Of all the globes that wheel around the sun
God chose our humble planet for His plan.
Beneath a rainbow flung across the earth
The miracle of life began its climb,
Until at last the human soul had birth
With god-like flame transcending space and time.
Oh, what is man, in all this boundless space,
That Thou hast made his heart Thy dwelling place?

Reprinted from the
January-February 1954 issue of
PARTNERS
The Magazine of Labor and Management

X-TG 140
.S8

THE

STOTHERT & PITT MAGAZINE

JANUARY, 1954

Issued quarterly for the entertainment and information of all employees of Stothert and Pitt, Ltd., of Bath.

JOURNEY'S END

By D. B. STEINMAN

With Life's full meed of dreams fulfilled,
of love and laughter,
I have known Heaven here. If there is
more hereafter
I do not fret impatiently to know; nor weep
If journey's end is but a long surcease
of sleep.

The road was long and steep before I
reached the crest
In sunset glow, with evening star to
bid me rest;
So weary children, after playing in the sun,
Are softly called to home and sleep
when day is done.

I rest upon a grassy knoll, a wood bird sings
And twilight brings the hushed caress
of angel wings.
I am content to sleep. I do not ask to see
Beyond the canopy of stars spread over
me.

Reprint from *The Boston Post*, 31st October, 1953.

SUSPENSION BRIDGE

By D. B. STEINMAN

Between two towers soaring high
A parabolic arc is swung
To form a cradle for the stars;
And from this curve against the sky
A span of gleaming steel is hung—
A highway for the speeding cars.
Between the cable and the span
A web of silver strands is spaced,
With sky above and ships below.
In human dream was born the plan
Of strength and beauty interlaced—
A harp against the sunset glow!

Reprinted from the Boston Post, 3rd *April*, 1953

THE ENGINEER

The engineer is the architect of progress, giving to civilisation its form.

The engineer is God's journeyman—continuing the work of creation.

There is a beautiful and impressive legend—so old that its origin has been forgotten. It goes like this:

Four men stood up with God when he made the world. They watched with wonder as the shimmering sphere, flung from the fingers of omnipotence, found its place in the shining galaxy of stars.

Blinded by the sublime spectacle, the men fell down in humble worship. And God said to them: "Rise, and fear not." And they rose and faced the Master with the new-born questions and ambitions that fired their souls.

And one of the men asked, "How was it done?" And God replied, "Go, find out for yourself." And that man went and became the scientist.

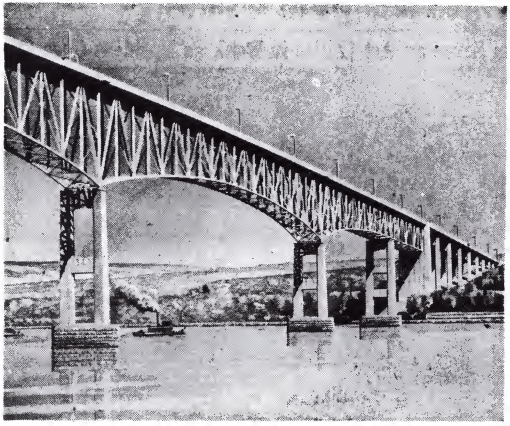
"Give it to me," the second man begged. And God said to him, "Go, possess it for yourself." And he went and became the business man.

"How beautiful!" exclaimed the third man. To him God said, "You shall go and because your soul burns within you, you shall create beauty!" And that man went and became the artist.

The fourth man said nothing; but, as his eyes followed the unfolding of the plan of creation, there kindled in his heart a desire to do these things. And to him God said, "You too shall go, and you shall plan and build. You shall learn to master the forces I have called forth, and you shall continue the work of creation!" And that man went and became the engineer.

Extract from *The Engineer: Building for To-morrow*, by D. B. Steinman.

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DRAWING OF PROPOSED KINGSTON BRIDGE: Kingston-Rhinecliff Bridge over Hudson River. Three-lane span, estimated cost $20,000,000, was designed by D. B. Steinman.

LOCATION SHIFTED FOR KINGSTON SPAN

Bridge to Rhinecliff Will Be Built North of the Cities—Project's Design Altered

By JOSEPH C. INGRAHAM

The location of the Kingston-Rhinecliff Bridge across the Hudson River has been shifted three and one-half miles north and the span design radically altered.

The new plan was made known yesterday by David B. Steinman, the consulting engineer, who designed the bridge and will supervise its construction for the New York State Bridge Authority. Bids for construction of the 7,793-foot-long span will be advertised on Monday.

Originally planned to connect directly with the thriving cities on either side of the Hudson, the location has been shifted to keep as much traffic as possible out of the heart of the communities, Mr. Steinman said.

The engineer noted that the decision to locate the bridge three and one-half miles north of Kingston Point was made by the Authority because it did not want to repeat the mistake made in construction of the Mid-Hudson Bridge linking Poughkeepsie and Highland. On the east shore the approaches to the span are through the main part of congested Poughkeepsie.

The new bridge design is a continuous truss crossing, in contrast to the first plan of a graceful suspension bridge. The original estimate on the bridge's cost was $14,000,000. The revised plan calls for a $20,000,000 bridge. However, it was noted that the continuous truss type costs less to construct than a suspension bridge. The same alteration of design was made for the main Thruway bridge between South Nyack and Tarrytown.

3 Traffic Lanes Provided

Mr. Steinman said that the final plan for a straight-line top with under-sided arches would provide an esthetically pleasing bridge. The Thruway span has been criticized as "ugly."

The Kingston-Rhinecliff bridge will provide a thirty-six-foot roadbed for three lanes of traffic and there will be raised 2 foot 2 inch walkways on either side of the traffic lanes. Clearance above water will be 135 feet, the minimum required by the Army Corps of Engineers. A new main river channel 780 feet wide is being dug near the east shore of the Hudson.

The span will be carried on eight piers in the river and twenty-two piers on land. The State Department of Public Works will provide access and approach roads and work already has started on extending State Route 32 on the west bank of the Hudson and Route 9G on the east side to connect with the new bridge.

The main piers will be of reinforced concrete faced with granite and will be supported on steel bearing piles driven to rock, about 155 feet below the water level. More than 3,200,000 pounds of steel will go into the big bridge.

X-TG 140
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A LA FRANCE

✠

QUEL est donc ce charme magique, ô France,
De l'amour la chaleur, d'une chanson la cadence,
Cet attrait romanesque auquel battent nos cœurs,
Ce souffle printanier qui nous parle de bonheur?
La lumière du soleil, du vent la suave caresse,
Les étoiles qui apaisent nos heures de détresse.
Par ton art, ta beauté, de ta culture la fleur,—
O France, — à l'Univers tu as donné un cœur!

O France, — quel est-il, cet appel enivrant
Auquel vibrent tes héros dans leurs nobles élans?
Tes fils dans leur ardeur l'étendard déployèrent,
Et pour la Liberté, leurs vies ils immolèrent;
Ils forgèrent pour les Hommes ton projet émouvant,
Pour la Fraternité de tous ils versèrent leur sang.
Ce rêve magnifique est maintenant notre flamme —
O France, — à l'Univers tu as donné une âme!

D. B. STEINMAN

Reprint from the 1954 YEAR BOOK
OF THE FREE FRENCH WAR VETERANS AND
LADIES' AUXILIARY, INC., NEW YORK POST NO. 1.

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In Oversize Box #27

ΑΤΛΑΝΤΙΣ

"ATLANTIS" AN AMERICAN NEWSPAPER PUBLISHED IN GREEK

SUNDAY, NOVEMBER 7. 1954.

ENGLISH SECTION

GREEK ORDER AWARDED TO FAMOUS BRIDGE BUILDER

New York, N. Y. — At an imposing consistory held in the Greek Orthodox Church of St. George Tropeoforos, 307 West 54th Street, New York City, on October 17, 1954, the Grand Cordon of the Ancient Equestrian Order of St. Dennis of Zante was bestowed on Dr. David B. Steinman, renowned engineer, philanthropist, philosopher, poet and dean of American bridge builders, whose works spanning the four corners of the world truly reflect his spirit of brotherly love in a genuine concrete applied form, bringing diverse peopies together. Dr. Steinman was most benevolent through his kindness in

and Members of the Pan Zakynthian Brotherhood Dionysios Solomos, Mr. Dennis Milas, President, Mr. John Viswardis, Secretary, and Mr. Cacoliris, Mr. Costas Aktipis, former President; and Mrs. Aktipis, Mr. Stathis Pallas; past President, representing the 48 destroyed towns of the unfortunate island of Zante, spiritual seat and traditional headquarters of the Ancient Order of St. Dennis of Zante. In addition, many other prominent guests honored Dr. Steinman with their participation in this inspiring ceremony such as Colonel Carl Loeb, U. S. Army Retired; Commander Gustave



A. D. or nearly 1,000 years ago, was resurgenced in the United States, under the auspices of the International American Institute, a non-profit, non-political, benevolent educational association, chartered and authorized by an act of Congress (March 3, 1901) entitled "Code of Law for the District of Columbia." The Order of Saint Dennis has as its sole purpose the material and spiritual assistance to the unfortunate Island of Zante reduced to dust and rubble by the recent holocaustic earthquake, fire and flood of August 1953.

The aims of this famous Order

#123

In Oversize Box #27

ΑΠΟ ΤΗΝ ΜΕΓΑΛΟΠΡΕΠΗ ΤΕΛΕΤΗΝ ΤΗΣ ΕΠΙΔΟΣΕΩΣ ΤΩΝ ΔΙΑΣΗΜΩΝ ΤΟΥ ΜΕΓΑΛΟΣΤΑΥΡΟΥ ΤΟΥ ΖΑΚΥΝΘΟΥ ΠΡΟΣ ΤΟΝ ΔΙΑΣΗΜΟΝ ΑΜΕΡΙΚΑΝΟΝ ΜΗΧΑΝΙΚΟΝ ΚΑΙ ΦΙΛΑΝΘΡ







NEW YORK, N.Y. Τὴν 17ην Ὀκτωβρίου εἰς τὸν ἐνταῦθα Ἱερὸν Ναὸν τοῦ ε'Ἁγίου Γεωργίου τοῦ Τροπαιοφόρου», μετὰ κατανυκτικὴν δοξολογίαν, χοροστατούντων τῶν αἰδεσιμωτάτων Ἀρχ. Νικάνδρου Ἰωάννου καὶ Σωτηρίου Μητράκου, ἔλαβε χώραν ἡ ἐπίδοσις τῶν διασήμων τοῦ Μεγαλοσταύρου τοῦ Τάγματος Ἱπποτῶν Ἁγίου Διονυσίου Ζακύνθου πρὸς τὸν περίφημον Μηχανικὸν καὶ φιλάνθρωπον Dr. D. B. Steinman, πρύτανιν τῶν ἀμερικανῶν bridge builders, διὰ τὴν ἔνθερμον καὶ θειαν πρὸς τὴν καταστρεφεῖσαν Ν ἀπονομὴ τοῦ προαναφερθέντος Μεγα τὴν ἔγκρισιν τοῦ Σεβασμιωτάτου Μη

ΤΟ ΙΣΤΟΡΙΚΟΝ ΚΑΙ Η ΔΡΑΣΙΣ ΤΟΥ ΤΑΓΜΑΤΟΣ ΤΩΝ ΙΠΠΟΤΩΝ ΑΓΙΟΥ ΔΙΟΝΥΣΙΟΥ ΖΑΚΥΝΘΟΥ

Τὸ Τάγμα Ἱπποτῶν Ἁγίου Διονυσίου Ζακύνθου (Equestrian Order of St. Dennis of Zante) ἱδρυθὲν ἐπὶ τῇ βάσει τῶν ἰδεωδῶν τῆς πρώτης Σταυροφορίας (1011 μ. Χ.), ἀρχικῶς ἀφιερωμένον εἰς τὴν μνήμην τ[illegible] Ἁγίας Μαγδαληνῆς, ἤτις τὸ [illegible]ον μετέβωσε τὸν Χριστιανισμὸν πρὸς τὴν Μέσην Ἀ[illegible] εἰς τὴν μνήμην καὶ τὰ φιλαδελφικὰ διδάγματα καὶ παραδείγματα τοῦ προστάτου καὶ πολιούχου τῆς νήσου.

Τὸ Τάγμα εἶναι γνωστότατον εἰς τὴν Βόρειον Εὐρώπην, προπαντὸς δὲ εἰς τὰς Κάτω Χώρας, ὅπου καὶ ἐπῆλθον ἀπόγονοι Ἱπποτῶν καὶ Ζακυνθίων εὐγενῶν τῆς τότε ἐποχῆς. [illegible] ἐλάμβανον μέρος εἰς τὰς ἐκστρατείας τῶν Σταυροφοριῶν καὶ ἐπολέμουν ἐναντίον τῶν ἀπίστων ἐν Ἁγίᾳ Γῇ καὶ ἀλλαχοῦ. Ἐκ τῶν ἀρχείων τοῦ Τάγματος ἀποδεικνύεται ὅτι ἐκ τῶν πρώτων ἐτῶν τῆς ἱδρύσεως αὐτοῦ ἐπολέμησαν ἐναντίον τῶν Μουσουλμάνων εἰς τὴν Ἱερουσαλὴμ καὶ ἐν Ἀκρῳ, ἐν τῇ Ἱερᾷ Μονῇ τοῦ Ὄρους Σινᾶ καὶ ἐν Ἀλεξανδρείᾳ τῆς Αἰγύπτου. Ἐν τῇ Ἱερᾷ Μονῇ τοῦ Ὄρους Σινᾶ ἐπολέμησαν ἐναντίον τῶν Μουσουλμάνων ἐπὶ τῇ βάσει ἐγγράφου τοῦ Πάπα Ἀλεξάνδρου τοῦ Δ'. Ἐν Ἀκρῳ ἐπολέμησαν ἐναντίον τῶν Μουσουλμάνων ἐπὶ τῇ βάσει ἐγγράφου τοῦ Πάπα Ἀδριανοῦ τοῦ Δ'. Ἐν Ἀλεξανδρείᾳ τῆς Αἰγύπτου ἐπολέμησαν ἐναντίον τῶν Μουσουλμάνων ἐπὶ τῇ βάσει ἐγγράφου τοῦ Πάπα Κλήμεντος τοῦ Ε'

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In Overseas Box #30

LIFE

Vol. 36 No. 21 REG. U.S. PAT. OFF. May 24, 1954



Inoversize Box #30

SS #125

SETTIMO GIORNO

Anno VII - N. 29 (299) - 22 Luglio 1954



Fra Punta Pezzo e Ganzirri, dove il canale è più stretto e meno profondo, si protenderebbe il ponte ideato dall'ingegnere americano David B. Steinman. Sarebbe lungo tremilatrecento metri e largo ventisette e mezzo.

"DIVENGA IL PONTE
[illegible] FRATELLANZA

X-T GWD. SR 1760
In Oversize Box #21

Gets an Oscar for the Beautiful Bridges He Built in New England and Elsewhere



Dr. David Bernard Steinman, who fell in love with the Brooklyn Bridge and this week received the top award of his fellow bridge engineers for combining art, economy and utility in more than 300 bridges.



The first steel bridge not painted grey or black—the Mt. Hope Bridge in Rhode Island—which is colored green. It is considered by some experts as the most graceful span in the world.

By JOHN MASON POTTER

The Brooklyn Bridge casts a mighty long shadow. It stretches up across New England to such places as Northampton, Hartford, to Mt. Hope, R I., and northeastward to Deer Isle and Bucksport, Me.

This week the shadow of the famous span reached into the Hotel Statler in Boston, where Dr. David Barnard Steinman, eminent bridge builder, artist, poet and author, was being awarded the "Oscar" of the civil engineering profession—the William Proctor prize for scientific achievement. Dr. Steinman, 67 years old, a multitalented man of boundless energy, was honored not only for building bridges, but also for making them beautiful.

It was a big moment in the life of the son of an immigrant when he stood up to receive the award and the prize of $1000 that is given annually to outstanding engineering scientists, but it was not the first time that Dr. Steinman has been honored by his fellows. Six times his bridges built the longest one there—Canada, Dominican Republic, Australia, Siam, and in Europe.

He is the son of an immigrant laborer and was brought up in the neighborhood where the span of the Brooklyn Bridge comes to earth near City Hall Plaza. As a boy he sold newspapers in the plaza, marvelled at the bridge which was a foremost tourist attraction, and dreamed of some day building bridges such as the one that already was dominating his life. His heroes then—and now—were the Roeblings, father and son, who built the bridge and sacrificed their own lives in its construction.

In school he studied hard and advanced rapidly. By the time he was 17 he was in college



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SONDERDRUCK AUS »EUROPA-VERKEHR · EUROPEAN TRANSPORT · TRANSPORTS EUROPÉENS« 3/1955
EDITOR: DR.-ING. GERHARD SOMMER, MINISTERIALRAT A. D., STUTTGART (GERMANY) · PUBLISHERS: OTTO ELSNER VERLAGSGESELLSCHAFT, DARMSTADT (GERMANY)

DAVID B. STEINMAN
Consulting Engineer, New York, N.Y.

THE MACKINAC BRIDGE — CONQUERING THE IMPOSSIBLE

X-IG 140

The Grand Rapids Press

GRAND RAPIDS, MICH., FRIDAY, DECEMBER 9, 1955.

Construction of Straits Bridge Is Half Completed

44 Millions Expended on Huge Project

Merrit-Chapman Plans Double Schedule on Foundations

St. Ignace — (UP) — Construction of the Mackinac bridge has passed the halfway mark, the span's designer and chief engineer said Friday.

Dr. D. B. Steinman said the milestone in construction of the $100,000,000 bridge that'll link Michigan's upper and lower peninsulas was reached late in November.

"The bridge is ahead of schedule in some phases and a little behind in others, but it's more than half completed," Steinman said.

Has Spent 44 Millions.

The half-way mark was passed without fanfare. Mackinac bridge authority officials said the bridge is more than half finished in both a physical sense and from the standpoint of money spent for construction.

So far, about $44,000,000 of the $80,000,000 earmarked for construction costs has been expended, authority officials said.

The remaining $20,000,000 will go for interest on the bond issue floated to finance the five-mile span.

Steinman said he was a little disappointed that all four of this year's main construction objectives won't be reached before work on the bridge is halted for the winter.

"But there's nothing to be alarmed about," Steinman said. "Construction schedules will be speeded up next spring to make up for the time we've lost this fall because of severe weather conditions."

Ends Concrete Work.

Merritt-Chapman & Scott ended all concreting operations for the year earlier this week because of cold weather and said it had been unable to complete all work on the span's 34 foundations.

Officials of American Bridge division of United States Steel, who are building the bridge's superstructure, said they wouldn't build an 8,614-foot catwalk over the middle one-third of the span until next spring.

Originally, it was hoped to have all foundations completed and the catwalk in place by the end of the second year of construction.

"We decided to stop concreting when it got cold because we can't sacrifice the quality of our work and that's what it would have meant doing if we continued any longer," Steinman said.

Steinman said Merritt-Chapman has promised to work a double schedule next spring to quickly complete work on the foundations while placement of the catwalk will be the first thing done by American Bridge workmen when construction resumes next April.

Fear Half-Done Job.

The bridge designer said it was decided not to put up the catwalk, which will be used as a work platform when the bridge's main cables are spun next year, because American Bridge officials feared they might get the job half done and then have to stop because of ice conditions.

If this had happened, Steinman said, it might have subjected the main towers to undue strain in the winter months "and we didn't want that to happen."

The other main objectives for the second year of construction included erection of the bridge's main towers to their full height of 552 feet and construction and placement of two 486-foot backstay spans.

Both towers have reached the 552-foot mark and workmen are now completing detail work on them. One backstay span is in place and installation of the other one is scheduled to be made within the next week.

Construction of the Mackinac bridge began in May, 1954 and is scheduled to finish in November, 1957.

Steinman said the objectives of the next two years of construction include:

1956—Completion of the cables. Continued construction of the truss spans on both sides and start of concrete roadway slabs on the truss spans. Start of construction of the viaducts and approaches on both sides.

1957—Erection of the suspension spans with roadway deck. Completion of construction of anchorages. Completion of construction of the roadway deck and truss spans, completion of approaches and toll plaza and then the opening of the bridge to traffic.

1958—Wrapping of the cables and complete painting and other minor detail work on the span.

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Mining Journal

Marquette, Mich. — Tuesday, November 15, 1955

Safety Experts Saving Lives In Building Of Mackinac Straits Span

BY DONALD H. DOOLEY
In The Milwaukee Journal

ST. IGNACE — "The bridge demands a life." This traditional expression has passed down through the ages ever since man first spanned the rivers and straits that have impeded his steady progress.

Unfortunately, bridges still demand lives, but engineers are getting closer and closer to the point where the saying will be simply another outmoded bugaboo.

The giant Straits of Mackinac Bridge being built here to connect Michigan's upper and lower peninsulas is near the halfway mark in construction. Much of its most dangerous work will be done in 1956 and 1957. But already it is evident that safety engineers have been successful in saving lives in the work on this longest suspension bridge in the world, four miles from anchorage to anchorage.

The safety engineer for the steelwork contractor here, the American Bridge Division of the United States Steel Corp., is Walter W. Clasen. He points out that a good safety program not only saves lives and prevents injuries, but it saves money. Safety training and equipment on this project are not considered extra expense. They are as important as the hiring of competent engineers.

Three Lives Lost

The Mackinac Bridge — by its very magnitude, complexity of construction and extremes of weather under which it is being built — would have been expected to cost scores of lives in the old days.

The bridge so far has claimed three lives, all of them before American Bridge started its work here. The men were killed in 1954, the first year of construction. One man died of the dreaded "bends," the often fatal illness which overcomes some men who work under great air pressure to build the underwater bridge foundations. The second man drowned and the third fell to his death.

Construction engineers hope that these will be the only deaths on the 100 million dollar project, scheduled for completion in November 1957. But they are not only hoping. They are working hard to prevent accidents.

Bridge building has always been hazardous. It still is, but it can be made relatively safe through education of workers and use of safety devices.

Toll On Other Bridges

The great Forth Bridge in Scotland claimed 57 lives back in the 1800's.

The Brooklyn Bridge, opened in 1883, cost more than 20 lives.

The Eads Bridge, crossing the Mississippi River at St. Louis, killed 14 of its builders.

The San Francisco - Oakland Bridge claimed the lives of 24 men.

Other big bridge projects in the past have had high death tolls. In the old days, it was expected that men would be killed. They worked under highly hazardous conditions. They worked below the surface of the water and hundreds of feet in the air. They were daredevils, and like the man on the flying trapeze, they were held in awe by more prosaic earthbound fellow men.

Tragedies Brooklyn Bridge

One of the most spectacular accidents on construction of the Brooklyn Bridge killed two workers and seriously injured three others. D. B. Steinman, famed designer who planned the Mackinac bridge, described it in his book, "The Builders of the Bridge."

"Despite the hazardous work aloft," Steinman wrote, "everything proceeded smoothly until one day in June, when the 15th strand of the north cable had just been completed and was in the process of lowering by 'letting out' at the New York anchorage.

"Suddenly it broke loose . . . As the end swept from the anchorage, it dashed off several of the men at work there, and then with a frightful leap of 900 feet through the air, grazing the houses and peopled streets below, it landed in the bridge yard . . . But only for an instant . . .



SKYSCRAPER TOWERS—Two main steel towers rise majestically 552 feet above water from piers founded on rock approximately 195 feet below lake level. These main towers support cables for a center span of 3,800 feet, second only to the 4,200 feet of the Golden Gate Bridge in San Francisco. The total length of the bridge and approaches is 26,195 feet, while the suspension bridge, 8,614 feet from anchorage to anchorage, is the longest in the world. —(U. S. Steel photo.)

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The Evening News

SAULT STE. MARIE, MICHIGAN THURSDAY, DECEMBER 1, 1955

Like Gibraltar

Steinman Says Bridge Went Through Storm In Fine Shape

The Mackinac Bridge piers and towers stood firm and immovable, as engineers knew they would, during a severe storm on Nov. 16, Dr. D. B. Steinman, designer of the famed span, said today.

Following is a complete analysis of how the bridge withstood the storm, prepared by Dr. Steinman:

"On Wednesday, November 16th, the partially completed Mackinac Bridge was tested by exposure to a storm of unusual severity. The winds began increasing about noon, and by 4:00 p. m. were blowing from the southwest at 50 to 65 miles per hour, with gusts of 70 miles per hour. The guyed wind-tower holding the weather measuring instruments at the bridge site blew down at 8:00 p. m.

"By 9:00 p. m., according to the records of the U. S. Coast Guard, gusts from the south-southwest repeatedly reached 76 miles per hour. Nearly all of the construction derricks had been removed to safe harbor. One tower-erection derrick broke loose and grounded, the boom buckled and went overboard. Two welding machines and one pump were washed off Pier 22. Three of the six survey towers, anchored in deep water, were submerged. But the bridge itself came through the storm with flying colors.

"The 34 piers, including the main piers founded at depths of 205 and 210 feet, and the two steel towers, standing on the main piers and completed to a height of 552 feet above water, stood and staunch firm and strong, defying the storm. In addition, the 472-foot backstay span, mounted high on two barges in St. Ignace harbor (and which was safely floated out to position and set firmly in place three days later) withstood the storm with strength to spare. There was absolutely no damage to any part of the bridge structure. The piers and the towers stood firm and immovable. The engineers knew they would.

"The storm of November 16th came close to the record of 78 miles per hour as the highest wind velocity ever recorded in the vicinity. The bridge is designed to be generously safe against much higher hypothetical winds. Knowing the generous margin of safety that we have built into the design of the Mackinac Bridge, we can safely state that the bridge can withstand any gale or hurricane that can conceivably occur. It will stand like the Rock of Gibraltar."

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THE STATE JOURNAL

LANSING—EAST LANSING, MICHIGAN, SUNDAY, OCTOBER 2, 1955

Mackinac Bridge Builder Is Poet

The famous bridge designer and builder, David B. Steinman, now completing the Mackinac bridge, said to be the world's largest bridge project ever undertaken, has a book of poems coming out soon titled "I Built a Bridge — And other Poems." (Davidson Press).

Elias Lieberman, a vice president of the Poetry Society of America writes the foreword. Now past the age of 60, Mr. Steinman has made a world place for himself building bridges through the Henry Hudson bridge in New York, the Constitution bridge in Puerto Rico, and the Kingston-Rhinecliff bridge across the Hudson — among many others.

He is a member of the Royal Society of Arts in Great Britain and past president of the New York Academy of Science. Among many honors received by Steinman was one from the Research Society of America for his work in suspension bridge aerodynamics for reconstruction on the Brooklyn bridge.

Mr. Lieberman speaks of the poems as indicative of "unquestioned sincerity . . . expression of the author's philosophy of life . . . his many impressions of man and nature."

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New York Times

NEW YORK, SUNDAY, NOVEMBER 20, 1955.

Brazil Honors Engineer

D. B. Steinman, a bridge engineer of New York, has received the Marechal Caetano de Faria Medal from the Brazilian Government in recognition of his engineering assistance to Brazil. In 1924-27 Dr. Steinman designed and built the Florianopolis Bridge between Florianopolis and the mainland of Brazil.

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El Dr. D. B. Steinman

Por: El Prof. Dr. C. CALOR MOTA

Mientras escribía mi tesis para mi licenciatura (Master) en ciencias de ingeniería civil para el Massachusetts Institute of Technology en 1927, tuve la oportunidad de comunicarme con el Dr. D. B. Steinman, autor de un libro sobre puentes colgantes. Mi tesis versaba sobre el diseño de un puente colgante, en el Estado de Rhode Island.

Fué para mi fuente de gran satisfacción cuando el Dr. Steinman me pedía copia de mi tesis. Por coincidencias de la vida, el Dr. D. B. Steinman recibió la encomienda de proyectar el mismo puente. Durante el verano de 1928 lo conocí personalmente en su oficina de New York, y me felicitó por mis cálculos para el proyecto del puente. Durante el verano de 1929 trabajé en su oficina.

Desde entonces he seguido la vida profesional de este especialista en puentes de fama internacional. La oficina del Dr. D. B. Steinman actuó como asesora del Departamento de Obras Públicas de Puerto Rico en el proyecto del Puente de la Constitución, el cual se inauguró el 15 de Diciembre de 1954.

El Dr. D. B. Steinman nació en New York en 1886. Se graduó de bachiller en ciencias de Ingeniería Civil (summa cumlaude) del College of the City of New York en 1906, obtuvo su licenciatura (Master) de Columbia University en 1909, y el doctorado en 1911. Comenzó su carrera en el campo de la enseñanza como Profesor de Ingeniería Civil en la Universidad de Idaho desde el 1910 al 1914. Desde el 1917 al 20 actuó como Profesor de Ingeniería Civil y Mecánica del Colegio de la Ciudad de New York.



Dr. D. B. Steinman

Desde el 1920 el Dr. Steinman ha proyectado más de 300 puentes en todas partes del mundo, algunos de los cuales constituyen novedades en el campo del diseño y construcción, como el puente Florianopolis en Brazil. Actualmente trabaja en el proyecto del puente del Straits of Mackinac en el Estado de Michigan, el cual costará alrededor de cien millones de dólares, y que constituye la obra cumbre del Dr. Steinman. Seis de sus puentes han recibido premios del American Institute of Steel Construction como puentes de una belleza reconocida.

REVISTA
DEL COLEGIO DE INGENIEROS, ARQUITECTOS Y AGRIMENSORES
DE PUERTO RICO
VOLUMEN XIV — JULIO, AGOSTO, SEPTIEMBRE, 1955 — NUMERO 9

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East St. Louis Journal

East St. Louis, Illinois—Friday, September 30, 1955

Revolving Scholarship

FORTY - EIGHT years ago David B. Steinman received a $650 scholarship that enabled him to attend Columbia University. After he finished his college education he became a designer of bridges. He vowed that when he could afford it, he would repay a debt of honor; he would replace the scholarship funds so that some other young man might have the opportunity for a college education.

Last week when the Columbia campus was crowded with freshmen and returning students, David B. Steinman presented to the university's School of Engineering a check for $10,000 to set up a new Debt of Honor scholarship. Altogether Steinman has given $65,000 to Columbia, a hundredfold repayment of his $650 scholarship.

Alumnus Steinman can well afford the genrous gifts to alma mater. He has been most successful in his field of engineering. He has designed over 300 bridges, including the new Henry Hudson Bridge and the $99,800,000 bridge being built at the Straits of Mackinac.

Not every scholarship student is able to repay, manyfold, the grant that enabled him to go to college. But if every scholarship student replaces the money advanced to him, the scholarship fund can be self-perpetuating.

It is likely that many college alumni pay their scholarship debts of honor without fanfare. In fact, repayment may be so usual that it is not news. The repayment isn't much when set against the increased earning power that a college education makes possible.

X-TG 140
.S8

Trenton Sunday
Times-Advertiser

Poetic Bridges

A first collection of poems by David B. Steinman, world famous bridge builder and designer, is announced by publication by The Davidson Press of New York. The book, entitled 'I Built A Bridge & Other Poems," carries an Introduction by Elias Lieberman, a vice-president of the Poetry Society of America.

Having devoted a lifetime putting poetry into bridges. Dr. Steinman decided, when he was past 60, to put bridges into poetry. That he has accomplished this feat is amply evidenced in this volume.

Among the many notable bridge structures on which Dr. Steinman was engaged as designer and consultant are the Florianopolis Bridge in Brazil, the Mount Hope Bridge in Rhode Island, the St. Johns Bridge in Oregon, the Carquinez Straits Bridge in California, the Waldo-Hancock Bridge in, Maine, the Henry Hudson Bridge in New York, the Constitution Bridge in Puerto Rico, the Raritan River Bridge in New Jersey, and the Kingston Rhinecliff Bidge across the Hudson. He is now completing the Mackinac Bridge in Michigan, the world's largest bridge project ever undertaken.

Dr. Steinman is a Life Fellow of the Royal Society of Arts in Great Britain and past president Sciences. He has been honored by a dozen countries and by many universities, here and abroad. In 1953 he received the highest award of the Research Society of America for his work in suspension bridge aerodynamics and a civic medal for his work on the reconstruction of the Brooklyn Bridge.

X-TG 140

EL MUNDO, SAN JUAN, P. R. — JUEVES 24 DE FEBRERO DE 1955.

20 al 26

Semana del Ingeniero

Por C. CALOR MOTA

La semana del 20 al 26 de febrero ha sido proclamada por nuestro Gobernador, la Semana del Ingeniero. Al celebrarse esta semana se hace justicia a una profesión que ha contribuído poderosamente al progreso extraordinario que ha tenido esta bella Isla en los últimos cincuenta años.

La profesión de la ingeniería moderna comenzó con la organización de la primera escuela, Ecole de Ponts Et Chaussées en París, creada por el rey Luis XV por decreto real fechado en febrero 14 de 1747. Su primer director fué Jean Perronet, quien proyectó y construyó el famoso y bello Puente de la Concordia en París.

El ingeniero Perronet fué director de la Escuela por 47 años habiendo muerto en febrero 27, de 1794. En el patio de la Ecole de Ponts Et Chaussees está la estatua de este consagrado director de la primera escuela de ingeniería que se organizó en el mundo, y la cual constituyó el modelo para las demás escuelas en los otros países.

En Puerto Rico la profesión de ingeniería está unida al Colegio de Agricultura y Artes Mecánicas de la Universidad de Puerto Rico. Desde su organización en 1911 el Colegio ha graduado en 43 años 1558 ingenieros, de los cuales 873 son ingenieros civiles, 339 ingenieros mecánicos, 178 ingenieros químicos y 168 ingenieros electricistas.

APORTACION NOTABLE

Una institución educativa que ha contribuído con un valioso grupo de técnicos en un país como Puerto Rico de 11,000 kilómetros cuadrados, tiene necesariamente que haber hecho una aportación notable al progreso sorprendente que ha realizado en medio siglo.

El Colegio de Agricultura y Artes Mecánicas en Mayagüez, al igual que los demás colegios de la Universidad de Puerto Rico merecen toda la ayuda y cooperación de nuestro pueblo, de nuestra Legislatura, por la fructífera labor que ha realizado para el desarrollo político, económico y social de nuestro pueblo.

No hay duda de que la Universidad de Puerto Rico es una de las más jóvenes y dotada de un dinamismo notable en el Continente americano, la cual ha inyectado una gran vitalidad creadora de la cultura y el progreso de Puerto Rico. Toda ayuda que reciba la Universidad de Puerto Rico, de nuestro Gobierno fructifica en pingües beneficios a toda la comunidad. Es justo declarar como un merecido tributo a la Legislatura y al Gobierno de Puerto Rico, que esta generosa cooperación nunca se ha regateado, lo que ha permitido que nuestro primer centro docente ocupe un sitio tan destacado en toda la América.

El futuro para el ingeniero con el desarrollo notable de la industrialización en Puerto Rico se presenta verdaderamente halagador, ya que dicho profesional es un factor primordial en dicho programa. Con la población excesiva que tiene Puerto Rico, sólo nos salva una industrialización intensa en todos los órdenes, y una emigración científicamente organizada. La mente organizadora y científica del ingeniero juega un papel muy importante en el porvenir de nuestro pueblo. El programa de rehabilitación social y económica de nuestro Gobierno del Estado Libre Asociado exige muchos ingenieros para su realización.

UN TRIBUTO

Es oportuno en esta semana rendir tributo de reconocimiento a los competentes ingenieros que han rendido la jornada de la vida consagrados a su profesión, y que han contribuído al progreso de nuestra Isla. Quiero aprovechar esta Semana del Ingeniero para recordar al famoso ingeniero Dr. D. B. Steinman de Nueva York, fundador y primer presidente de la National Society of Professional Engineers, quien proyectó el Puente de la Constitución en Puerto Rico.

En estos momentos se construye el puente Mackinaw Straits de Michigan, a un costo de cien millones de dólares como la obra cumbre de su gran carrera profesional.

Hoy millonario y retirado de su intensa actividad profesional, ha organizado el D. B. Steinman Foundation para ayudar aestudiantes brillantes de escasos recursos económicos, ya que él fué también un estudiante pobre y brillante y recibió ayuda durante sus tiempos de estudiante. Ese es el espíritu que debe animar a todo profesional que se interese por la comunidad en que vive.

El es el prototipo del ingeniero, considerado como el más famoso especialista en puentes en el mundo, y primer presidente de la Sociedad Internacional de Ingenieros Profesionales con sede en París. Sirva este distinguido ingeniero como el símbolo del ingeniero ideal para esta prestigiosa profesión a la cual rendimos reconocimiento en esta Semana del Ingeniero.

X-TG 140

February
1955

The Poetry Society of America

BULLETIN

NEW MEMBERS

MR. STEINMAN is a bridge engineer by profession. He received his B.S. summa cum laude from the College of the City of New York in 1906, his C.E. from Columbia in 1909; his A.M. and Ph.D. also from Columbia (1909 and 1911). His many honorary degrees include the Sc.D. from the University of Ghent (Belgium), the D.C.E. from the University of Bologna (Italy), the LL.D. from Alfred University, etc. He served as professor of civil engineering at the University of Idaho from 1910-1914, as professor in charge of civil and mechanical engineering at City College (N. Y.); as special assistant to Gustav Lindethal on design and construction of Hell Gate Bridge and other notable bridges, in the United States, Canada, Brazil, Puerto Rico, and elsewhere. He is now engaged in the reconstruction of Brooklyn Bridge. His honors in the form of medals, citations, etc. are too numerous to list. This is also true of his publications. During a lifetime devoted to his profession he has found time to write poetry and to encourage the writing of poetry in others.

X-TG 140

S8

THE BENT

of TAU BETA PI

Title Reg. U.S. Pat. Off.

VOLUME XLVI FEBRUARY, 1955 NUMBER 1

WHO'S WHO IN TAU BETA PI

STEINMAN, DAVID B., New York Alpha '06

Eminent bridge designer of New York, was honored in Paris last October when he was awarded the Grand Cross of "L'Etoile du Bien et du Merite." Dr. Steinman was the only recipient of this high honor outside of France.

BROOKLYN BRIDGE: NIGHTFALL

Against the city's gleaming spires,
Above the ships that ply the stream,
A bridge of haunting beauty stands—
Fulfillment of an artist's dream.

From deep beneath the tidal flow
Two granite towers proudly rise
To hold the pendent span aloft—
A harp against the sunset skies!

Each pylon frames, between its shafts,
Twin Gothic portals pierced with blue
And crowned with magic laced design:
Of lines and curves that Euclid knew.

The silver strands that form the net
Are beaded with the stars of nigh:
Like jewelled dewdrops that adorn
A spiderweb in morning light.

Between the towers reaching high
A cradle for the stars is swung;
And from this soaring cable curve
A latticework of steel is hung.

Around the bridge in afterglow
The city's lights like fireflies gleam,
And eyes look up to see the span—
A poem stretched across the stream!

—D. B. STEINMAN,
New York Alpha '06

X-TG 140

THE SONG OF THE BRIDGE.

By D. B. STEINMAN.

With hammer-clang on steel and rock
I sing the song of men who build.
With strength defying storm and shock
I sing a hymn of dreams fulfilled.

I lift my span above the tide
And stand where wind and wave caress.
I bear the load so men may ride
On rainbow road to happiness.

The light gleams on my strands and bars
In glory when the sun goes down.
I lift a net to hold the stars
And wear the sunset as my crown.

—Reprinted from "The New York Times," June 18, 1953.

THIS GLADNESS I HAVE KNOWN.

By D. B. STEINMAN.*

I have seen a bluebird on the wing,
Above a field in gold and scarlet hue;
A spray of apple blossoms in the spring
In dazzling light against a sky of blue.

I have known the joy of golden days,
A grassy bank, a stream in jewelled glow;
Then oak and maple leaves in autumn blaze,
And pines in winter, crowned with sunlit snow.

God, I thank Thee for the gift of light
And weep for those who dwell in endless night.

—Reprinted from "The Hartford Courant," July 31, 1954.

* Dr. D. B. Steinman is regarded by many engineers as the greatest bridge engineer of our day. His work is legion. His latest work is designing the Messina Straits Bridge. Also, he has a soul for beautiful things. It "spills over" in poetry and in this, like his bridge building, his talent seems to be never-ending. —F. M. TAYLOR.

X-56 147

MICHIGAN PRESS CLIPPING BUREAU
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TELEPHONE 8-4610
217 Michigan Avenue

MICHIGAN
Sault Ste. Marie, The Eve. News
(D 9,084)

FEB 21 1955

Mackinac Bridge Designers Are Praised by P. M. Brown

LANSING. — Prentiss M. Brown, chairman of the Mackinac Bridge Authority, paid tribute to the designers of the Mackinac Bridge in observance of National Engineer's Week proclaimed for February 20-26 by President Eisenhower.

"The Mackinac Bridge, now under construction, is recognized as the greatest engineering feat of this generation and we are extremely grateful to Dr. D. B. Steinman, designing engineer, and Glenn B. Woodruff, consultant to him, and to the entire engineering profession for the magnificent contribution they are making to the general welfare every day," said Brown.

According to Brown, Dr. Steinman of New York City is recognized as the world's leading long-span bridge designer and has participated in the engineering on more than 800 successful bridges all over the world. Mr. Woodruff of San Francisco has to his credit some of the world's greatest spans, including the Oakland-San Francisco bridge and the rebuilt Tacoma Narrows bridge.

"We are told that while there are no engineering problems in connection with the Mackinac Bridge that have not been solved before, the forces of nature at the Straits, their width and depth, makes it the greatest engineering feat since the construction of the Golden Gate Bridge in 1936," said Brown.

"We are quite pleased with progress to date since the six most difficult foundations to be built for the Mackinac Bridge are practically completed. It is a great tribute to our engineers and contractors that so much has been accomplished in so short a time. The members of the Mackinac Bridge Authority join me in congratulating them for their accomplishment to date and in wishing them good luck for continued progress. In this manner, we pay our tribute to professional engineers throughout the country."

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Columbia Alumni News
January 1955

HONORS AND AWARDS

David B. STEINMAN, E, AM, '11PhD, was awarded the Grand Cross, Cordon and Diploma of the Order of Saint Dennis of Zante at special ceremonies in the Greek Orthodox Church of Saint George in New York City, October 17.

. . . David B. Steinman, '09E, '09AM, '11PhD, the Grand Cross of "L'Etoile du Bien et du Merite," from the French government at the Sorbonne in October . . .

X-TG 140

BROOKLYN ENGINEERS' CLUB

FEBRUARY 1955

THE DAVID B. STEINMAN FOUNDATION

Dr. D. B. Steinman, well-known bridge engineer, and one of our members, and his family have established the David B. Steinman Foundation, Inc., for the purpose of making contributions and grants to educational institutions and other worthy causes. The principal objective is to make gifts to engineering schools for establishing scholarships, awards, and loans to aid deserving students to complete their engineering studies or to pursue full-time graduate work in engineering. These grants are inspired by Dr. Steinman's lifelong gratitude for similar financial aid which he received in the form of scholarships and fellowships during his college years and which enabled him to pursue his chosen work.

We would like to quote the following letter:

Dear Dr. Steinman:

I have pleasure in reporting to you that the Board of Higher Education adopted the following resolution:—

RESOLVED, That the Board of Higher Education accepts with appreciation the amount of $10,000. from the David B. Steinman Foundation, to establish the David B. Steinman Awards to be granted each year in the form of loans or grants in the School of Technology to students in course who need financial assistance to complete their engineering studies, with the understanding that the awards shall be made to deserving students selected on the basis of character, scholarship, range of knowledge and interests, well-rounded performance, and leadership potentiality.

These loans or grants will range from $100. to $500. depending on the judgment of the appropriate college authorities. Where made as loans, the awards will be non-interest bearing and voluntary debts of honor. It will be hoped that any person who receives an award will earnestly wish to repay it and thereby make it possible for future students to enjoy similar privileges.

Very truly yours,

Ruth S. Shoup, Secretary
Board of Higher Education

X-TG 140
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ENGINEERING NEWS-RECORD • January 20, 1955

Consulting Engineer Sets Up Foundation To Aid Students

D. B. Steinman, well known bridge engineer, and his family have established the David B. Steinman Foundation, Inc., to help deserving students complete engineering studies or pursue full-time graduate work in engineering.

In announcing the Foundation, Dr. Steinman called it an expression of his gratitude for financial aid he received in the form of scholarships and fellowships during his college years.

The first disbursement by the Foundation was made last month to the Board of Higher Education of the City of New York. Amounting to $10,000, it will be used for loans or grants to students in the School of Technology of City College who may need financial assistance to complete their course or to undertake graduate study. According to the Board of Higher Education, the loans or grants will range from $100 to $500, with the loans being interest-free and unsecured.

X-TG 140
.S8



From the Regents of the University of Michigan we learn of a $10,000 gift from D. B. Steinman, designer and chief engineer of the Mackinac Bridge, to establish a scholarship fund in the university's School of Engineering. The grant was made through the David B. Steinman Foundation. During the past six months, this organization has given some $60,000 in grants to six educational institutions.

X-T6 140
.S8

NEW YORK
Herald Tribune

TUESDAY, SEPTEMBER 27, 1955

Pays Columbia 'Debt' Hundredfold

Bridge Builder, Aided as Student, Has Given $65,000

David B. Steinman, sixty-seven, bridge builder, returned yesterday to his alma mater, Columbia University School of Engineering, with a $10,000 check in his pocket to pay a "debt of honor."

He would like the money to help finance ambitious students through school just as he had received $650 in three scholarships from Columbia nearly fifty years ago, he told Dr. John R. Dunning, Dean.

"I never believed I would be able to repay," said the engineer, who grew up on the Lower East Side with a dream of building bridges such as the Brooklyn Bridge.

The grant, to be set up as a revolving fund, brought to $65,000 the total donated for various purposes to the school by Mr. Steinman in the last year. In repaying his "debt" one-hundred-fold, he spoke of bridges and their shape and at times, their poetry.



Herald Tribune photo by Don Rice

David B. Steinman (left), presenting check for $10,000 yesterday to Dr. John R. Dunning, dean of the Columbia University School of Engineering.

Work on 3 Continents

He has designed more than 300 bridges on six continents, among them the Henry Hudson Bridge, the Thousand Islands Bridge which links the United States and Canada and the $99,800,000 Mackinack Bridge in Michigan now under construction.

"My career as an engineer—a builder of bridges—is a boy's dream come true," he related. "I grew up in the shadow of the Brooklyn Bridge. As a boy, I loved to walk over the span and to explore its marvels.

"To me, it was truly a 'miracle bridge'; and, as I wondered how so marvelous a work could have been created, I was fired with the ambition to become a builder of bridges."

Started With a Penny

Mr. Steinman's career began with a penny. At the age of seven, he took the penny to Park Row, bought two newspapers, sold them for a penny each. By the end of the day he had netted 50 cents.

He was discharged from a $1.50-a-week job in a dry-goods store in 1900 at the end of his first week as errand boy because he was undernourished and the proprietor had found a stronger lad. When he showed up on registration day at Columbia in 1906, applying for his first engineering scholarship, the late Prof. William H. Burr indorsed the application with a note: "The most deserving case I have known in all my years at Columbia University."

Mr. Steinman's office at 117 Liberty St. today does a $2,000,000-a-year business.

TG 140
.S8

THE EVENING NEWS, SAULT STE. MARIE, MICHIGAN TUESDAY, SEPTEMBER 6, 1955

Mackinac Bridge Designer Gives $10,000 Grant to U-M

ANN ARBOR — The Regents of the University of Michigan have announced the receipt of a $10,000 gift from D. B. Steinman, designer and chief engineer of the Mackinac Bridge, to establish a scholarship fund in the School of Engineering.

The grant was made through the David B. Steinman Foundation, established by Dr. Steinman and his family to provide financial aid to deserving students to enable them to complete their engineering education.

During the past six months the David B. Steinman Foundation has given a total of $60,000 in grants to six educational institutions. The gifts are inspired by Dr. Steinman's life-long gratitude for similar aid he received in the form of scholarships and fellowships as a student.

X-TG 140
.S8

Consulting Engineer Reports On Mackinac Straits Bridge

By D. B. STEINMAN,
Consulting Engineer
Mackinac Straits Bridge

Exceptionally fine weather this summer has enabled the substructure contractor to make very good progress on the Mackinac Straits Bridge.

As of Sept. 1, approximately 79 per cent of the contract time for the substructure has elapsed and 88 per cent of the work has been completed. Of a total of 450,000 cubic yards of concrete, approximately 400,000 cubic yards have been placed to date. A new world's record has been established for underwater concrete placement from a single floating plant: 6,250 cubic yards in a 24-hour day.

Deepest Suspension Piers

The two main piers have established a new record as the deepest suspension bridge piers in the world. They are founded on rock at depths of 210 feet and 205 feet below water, respectively.

With the completion of the two main piers, steel tower erection was started July 2. As of Aug. 27, the two towers have been erected to a height of 262 feet and 226 feet, respectively. Their early completion to a height of 552 feet above water is anticipated.

Anchorage steel for the main cables has been erected in position on the two anchorages and the two massive anchorages are being rushed to completion to bridge height. When completed, each anchorage will weigh 170,000 tons to resist a total pull of 30,000 tons from the two cables.

Bridge Weights Listed

Of a total of 50,000 tons of structural steel in the bridge, 27,000 tons have been received in the fabricating shops in Gary, Ind., and Ambridge, Pa.; 15,000 tons have been fabricated; 10,000 tons have been shipped to the bridge site and 6,000 tons have been erected.

Of a total of 11,500 tons of cable wire, 4,700 tons have already been delivered at Sault Ste. Marie and St. Ignace.

The total weight of the bridge is 96,000 tons in the superstructure and 890,000 tons in the substructure; of the latter amount, 720,000 tons (360,00 cubic yards (are under water.

Schedule Printed

The labor force at the bridge site amounts to approximately 1,000 men. The D. B. Steinman organization has 44 engineers at the bridge site and 200 in the bridge-designing office in New York.

The completion schedule is as follows:

1955 — Erect towers, cable bents, backstay spans and start the south truss spans. Also the suspended catwalks for cable stringing. Complete construction of substructure except deferred portion of anchorage.

1956 — Erect the cables. Continue erection of the truss spans at both sides. Start the concrete roadway slab on the truss spans. Start construction of the viaducts and approaches on both sides.

1957 — Erect the suspension spans with roadway deck. Complete construction of anchorages. Complete erection and roadway deck of truss spans. Complete approaches and toll plaza. Open bridge to traffic.

1958 — Wrap the cables and complete the painting.

The program is geared to the anticipated opening of the bridge to traffic in November 1957.

The Mining Journal, Marquette, Mich.

Tuesday, September 6, 1955

X-16 140
.38

THE SIGHT-GIVER

Vol. XXV, No. 1 October 1955

THE GLADNESS I HAVE KNOWN

by D. B. Steinman

I have seen a bluebird on the wing
Above a field in gold and scarlet hue,
A spray of apple blossoms in the spring
In dazzling light against a sky of blue.

I have known the joy of golden days,
A grassy bank, a stream in jeweled glow;
Then oak and maple leaves in autumn blaze,
And pines in winter crowned with sunlit snow.

God, I thank Thee for the gift of light
And weep for those who dwell in endless night.

LAVELLE SCHOOL FOR THE BLIND
221st Street and Paulding Avenue New York 69, N. Y.

X-TG 140
S8

X-TG 140.S8 #150

Die Brücke über die Mackinac-Strasse

VON

D. B. STEINMAN
Beratender Ingenieur
NewYork

Auszug aus Nr. 7-8 — Juli-August 1955
der
INTERNATIONALEN ZEITSCHRIFT FÜR STAHLVERWENDUNG
ACIER · STAHL · STEEL

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(Centre belgo-luxembourgeois d'Information de l'Acier)
47, rue Montoyer und 3, rue de la Science, Brüssel

unter Mitwirkung der
BERATUNGSSTELLE FÜR STAHLVERWENDUNG, DÜSSELDORF,
UND DES DEUTSCHEN STAHLBAUVERBANDS, KÖLN

X-TG 140
.S8 #151



The legs of the north main tower of the Straits of Mackinac Bridge rise to skyscraper heights as bridgemen put the first section of the fourth tier into place recently. The "creeper" derrick is shown in action. The derrick raises itself between the tower legs as additional sections are added. The towers are approaching the halfway mark of their eventual height of 552 feet.

Reprinted from the Sault Ste. Marie Evening News, August 26, 1955

TG 140
.S8 #152

Survey Begins for Messina Straits Bridge from Italian Mainland to Island of Sicily

A Reprint from the AMERICAN BRIDGE, TUNNEL AND TURNPIKE ASSOCIATION, *Quarterly Toll Review*, Pre-1955 Meeting Issue.

X-IG 140
.S8 #153

THE MACKINAC BRIDGE—CONQUERING THE IMPOSSIBLE

By
D. B. Steinman

Reprinted from
TRANSACTIONS OF THE NEW YORK ACADEMY OF SCIENCES
Ser. II, Vol. 18, No. 1, Pages 39-59
November, 1955

X-IG 140.S8 #153

X-T6 M,S6
#154

Journal of the Michigan Schoolmasters' Club

UNIVERSITY OF MICHIGAN OFFICIAL PUBLICATION

X-TG 140
.S8 #155

The Mackinac Bridge — Conquering the Impossible

By
D. B. STEINMAN

Reprinted from the
Journal of the Boston Society of Civil Engineers
January, 1956

X-TG 140
.S8

The Bridge at Mackinac

BY D. B. STEINMAN

(Editor's Note: Mr. Steinman is the chief designer of the Straits bridge)

In the land of Hiawatha,
Where the white man gazed with awe
At a paradise divided
By the Straits of Mackinac —

Men are dredging, drilling, blasting,
Battling tides around the clock,
Through the depths of icy water,
Driving caissons down to rock.

Fleets of freighters bring their cargoes
From the forges and the kilns;
Stone and steel — ten thousand barge-loads —
From the quarries, mines, and mills.

Now the towers, mounting skyward,
Reach the heights of airy space.
Hear the rivet-hammers ringing,
Joining steel in strength and grace.

High above the swirling currents,
Parabolic strands are strung;
From the cables, packed with power,
Wonder-spans of steel are hung.

Generations dreamed the crossing;
Doubters shook their heads in scorn.
Brave men vowed that they would build it —
From their faith a bridge was born.

There it spans the miles of water,
Speeding millions on their way —
Bridge of vision, hope, and courage,
Portal to a brighter day.

THE BAY CITY TIMES

MONDAY, APRIL 9, 1956